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ABSTRACT

This certification model, which is a refined version of the 1974 AECT Certification Model, is directed to the needs of educational media specialists, their employers and educators, and to certifying and accrediting agencies that approve programs preparing educational media specialists. Included in the document are reports on accreditation and certification of audiovisual, educational media, and library personnel. Appendices detail guidelines for the certification of personnel in educational communications and technology, including a list of competencies for specialists and technicians in media management, media product development, and instructional program development. This report is designed to serve the professional needs of all educators concerned with the effective utilization of instructional resources. (JEG)

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certification

Guidelines For Certification Of Media Specialists

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Chairperson, AECT Certification Committee

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AECT President

APRIL 1977
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foreword

Concern with certification of the media professional has a long history. The present development of certification standards can be traced to the early 1930s when Charles F. Hoban, then Pennsylvania's Director of Visual Education in the State Department of Public Instruction, was instrumental in obtaining state legislation that required students in teacher education programs to acquire some media competence. Later, California enacted a similar requirement. The large scale introduction of media and technology into education following World War II greatly increased the concern with the quality of preparation and performance of the educators involved. The educational utilization of media and technology began to be recognized as an area of special expertise. In the view of many in education, the specialty in media and technology holds the most hope for the future of American education.

Much of the language in this latest contribution to the development of certification practices reflects the turmoil in terminology that has existed for some time in this professional field. The "field" has been forming in part from the coming together of school librarianship and audiovisual specialties into an emerging general educational specialty. Efforts have been made over the last two decades to describe and define the field. The "joint standards" (Standards for School Media Programs, published in 1969; the revision, Media Programs: District and School, published in 1974) developed through the cooperation of the "library" and "audiovisual" communities demonstrate that some agreement is possible. The most recent revision uses the terms media professional and media specialist. These terms are not universal or consistently used in the states at the present time. Considerable variation is found in the state certification documents.

It is the hope of the Association for Educational Communications and Technology that the move toward a common language will continue. The user of this book is urged to help us with progress in that area. While efforts of many professionals in our field are reflected in this document, a special debt of gratitude is owed to William F. Grady and Minaruth Galey for organizing this current work.

Howard Hitchens
Executive Director, AECT

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introduction

The function of certification in educational media is to ensure selection of persons who are fully qualified to initiate, implement, and direct a media program in the elementary and secondary schools. The availability of media and technology have attracted a large number of people whose media skills and experiences range from those of the talented amateur, to the skilled enthusiast, to the professional employee in education. Certification is the means of reliably identifying those persons who have the academic preparation, knowledge, and competencies to function as educational media specialists.

The AECT Certification Model was originally published in the November 1974 issue of Audiovisual Instruction and included the full report of the National Certification Task Force. The Model presented in this publication has been refined through the efforts of members of the original task force and the current certification committee chairperson. This document is directed to the needs of the following five publics:

1. Educational media specialists;

2. Employers of educational media specialists;

3. Educators who teach educational media specialists;

4. Agencies that certify educational media specialists;

5. Accrediting associations that approve programs preparing educational media specialists.

The concerns of these publics vary.

First, educational media specialists must have a clear view and understanding of their responsibilities and areas of activity if they are to achieve the purposes of the educational media program. This document provides a strong foundation for specifying the appropriate activities and competencies for the educational media specialists in (1) media management, (2) media product development, and (3) instructional program development.

Second, employers of educational media specialists (superintendents, for example) may not be fully prepared in the field of educational technology and therefore look for guidance in identifying the workers who are qualified as educational media specialists. This document provides assistance to this end. In addition, the model identifies job descriptions, assignments, and roles that are realistic.

Third, those who teach aspiring educational media specialists need a clear statement of the competencies required of the students. The achievement of these competencies is the goal of the professional preparation program. With competencies clearly defined, the design of an appropriate set of learning activities is more readily accomplished. The AECT Model provides a firm basis for the selection of learning activities designed to prepare the professional educational media specialist.

Fourth, those responsible for certifying educational media specialists require a realistic statement of the characteristics of the qualified candidate. The ideal statement is appropriate for use by state agencies whether the issuance of a certificate is based on competencies, on program approval, or on transcript analysis. The standards for state certification can be designed with relative ease from the AECT model with stated competencies in media management, media product development, and instructional program development.

Fifth, accrediting associations utilizing evaluation guidelines for approving programs that prepare educational media specialists can employ this model as the basis for their evaluations. The model specifies competencies that should be produced by programs that prepare educational media specialists. The credentials of the faculty, the learning experiences of the students in the programs, and the procedures for advising, as well as the facilities and instructional resources, are best examined and evaluated in reference to what graduates should be capable of doing as a result of the professional preparation program.

This document was developed in response to professional needs. It is provided in the hope and expectation of serving those needs for all educators concerned with the effective utilization of instructional resources.

This new publication is intended to increase the availability of the Model. It is of special interest here that the AECT Certification Model published in 1974 has already been widely implemented as evidenced by the results of the 1976 nationwide survey of certification. The results of that survey are reported in Chapter III.

Minaruth Galey, Chairperson
Certification Committee

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the model

The Certification Model lists more competencies than any one media specialist can be expected to achieve. Nevertheless, every professional media specialist can be expected to acquire some competencies in all three areas of responsibility and in each type of function, even though an individual may have emphasized one particular area in his or her preparation program or on the job.

The form of the Certification Model presented here is a summary of AECT's Certification Model first published in the November 1974 issue of Audiovisual Instruction. That very detailed model was a result of the report developed by the National Task Force on Certification.

In 1975, Bergeson and Grady conducted a survey of reactions to the model and its implementation. Results indicated that the model had been widely disseminated and several states were in the process of revising their state certification programs. However, results also indicated a need for a shorter version of the model that would subsume some of the detail under more general categories. A 1976 survey conducted by Galey, chairperson of AECT's Certification Committee, and open hearings held at the AECT national convention in 1977 confirmed the need for a presentation format that would make the Certification Model easier to work with on a day-to-day basis.

It was to this end that the model presented in this chapter was developed. It is based on a field test involving reactions from 80 persons across the country (personnel in state departments of education, faculty in colleges of education, and practitioners in the field), the results of two open hearings on certification, and the editorial work of a panel of three writers.

As mentioned earlier, the Certification Model is intended to serve several different publics. Since the shorter version will not adequately meet the needs of all those concerned with certification, the full model is also included (Appendix, page 25). The detailed task lists of the 1974 version are particularly useful to those who are designing programs of study to prepare educational media specialists.

MODEL FOR CERTIFICATION OF EDUCATIONAL MEDIA SPECIALISTS

AREA OF RESPONSIBILITY

.MEDIA MANAGEMENT COMPETENCIES	.MEDIA PRODUCT DEVELOPMENT COMPETENCIES	INSTRUCTIONAL PROGRAM .DEVELOPMENT COMPETENCIES
Organization Management Function	Organization Management Function	Organization Management Function
Set goals for the media program		Initiate agency-funded development project
Organize and reorganize organizational structure to meet goals		Plan development programs/projects
Plan IMC operation for coming year		
Coordinate facilities planning		
Plan management program/projects		
Initiate agency-funded projects		
Formulate policy for procedure and equipment changes for the media program		
Monitor and change operation of the media program		
Administer IMC		
Administer/direct project		
Administer media program		
Design financial structure		
Prepare annual budget		
Supervise cooperative purchasing		
Purchase instructional materials		
Personnel Management Function	Personnel Management Function	Personnel Management Function
Staff projects		Staff instructional development projects
Staff media program		
Conduct in-service training of new staff on general office procedures		
Set up in-service workshops		
Improve communications among personnel in the IMC		
Supervise personnel in the media program		
Supervise various subunits		
Supervise student workers		
Rate and evaluate personnel		
Research-Theory Function	Research-Theory Function	Research-Theory Function
Conceptualize theoretical management models	Conceptualize theoretical production models	Conceptualize theoretical development models
Conduct management research project	Conduct product research project	Conduct program development research projects
Analyze management research data	Analyze product research data	Analyze program development research data
Improve standards of management research projects	Improve standards of product research projects	Improve standards of program research projects
Perform feasibility studies on new equipment	Research learning strategies for media products	Research learning strategies for media programs
Conduct surveys of media usage		

MEDIA MANAGEMENT COMPETENCIES	MEDIA PRODUCT DEVELOPMENT COMPETENCIES	INSTRUCTIONAL PROGRAM DEVELOPMENT COMPETENCIES
		Perform research on effectiveness of media and programs Conduct research on effective media utilization techniques
Design Function	Design Function	Design Function
Plan equipment systems	Skilled in designing instructional materials for courses Skilled in designing programed instruction materials Design materials for in-service workshops Write units for in-service workshops Develop instructional packages for individualized instruction	Coordinate design of in-service activities Develop teachers' guide for instructional materials Coordinate design of automated presentations Improve instruction through systems approach Design new facilities for programs Design instructional spaces
Production Function	Production Function	Production Function
	Coordinate photography on location Coordinate producing visuals for presentation Prepare materials for TV Produce/direct motion pictures and TV Coordinate production of audiotapes Coordinate production of slide presentations Coordinate production of sound filmstrip Coordinate production of materials for course Coordinate mass production of course materials Improve production standards Write computer programs for CAI Coordinate production of TV programs	
Evaluation-Selection Function	Evaluation-Selection Function	Evaluation-Selection Function
Evaluate holdings of instructional materials Manage selection procedures Provide for evaluation of media materials and procedures	Plan product evaluation Evaluate quality of production	Plan and focus program project evaluations Develop evaluation models and techniques Collect, process, analyze, and interpret evaluation data Lead in previewing and selecting instructional materials Lead in evaluating instructional materials Operate pilot projects for prototype instructional materials

MEDIA MANAGEMENT COMPETENCIES	MEDIA PRODUCT DEVELOPMENT COMPETENCIES	INSTRUCTIONAL PROGRAM DEVELOPMENT COMPETENCIES
Support-Supply Function	Support-Supply Function	Support-Supply Function
Improve acquisition procedures for instructional materials Improve cataloging procedures Catalog materials Improve distribution systems Locate curriculum materials		
Utilization	Utilization	Utilization
Monitor individualized instruction/ self-instructional media projects Monitor instructional facilities Help in instructional materials utilization Orient students to use of media materials		Help students and teachers identify learning interests and select objectives Help students and teachers select learning activities to meet objectives Help students and teachers prepare to use learning activities Help teachers follow up student work on learning activities Help students and teachers to use reading, listening, and viewing experiences Arrange media presentations for large student groups Act as resource for individual/group directed learning activities Facilitate group learning process Facilitate tutoring of individual students with learning difficulties
Utilization-Dissemination Function	Utilization-Dissemination Function	Utilization-Dissemination Function
Maintain professional status/keep up in the field Report to management Provide information on IMC Explain special instructional projects to visitors	Maintain professional status/keep up in the field Report to management Advise product planners on education market Teach product development course	Maintain professional status/keep up in the field Report to management Develop dissemination strategies for teacher preparation project Consult on media use and design Promote increased use of instructional media Inform teachers on media Consult with teachers regarding teaching behavior Facilitate fullest use of program resources Assist content specialist in developing materials Teach media courses Help teachers improve their teaching skills

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certification

OF AUDIOVISUAL, EDUCATIONAL MEDIA, AND LIBRARY PERSONNEL

NATIONWIDE STATUS REPORT

This report is developed from a series of four nationwide studies (1968, 1970, 1972, 1976) concerning certification of educational communications and technology personnel. It contains a summary of the data presented in the first three studies and introduces the findings from the 1976 nationwide survey.[1]

Historical Background

Standards for the certification of audiovisual personnel were established by the Association for Educational Communications and Technology (then DAVI,[2] hereinafter referred to as AECT) in a document entitled Guidelines for the Certification of AV Personnel published in November 1969. The Certification Committee of the PEMS Commission had concentrated its major effort since the 1968 AECT Convention in Houston, Texas toward developing these guidelines. The document was presented to the Delegate Assembly at the 1969 AECT Convention in Portland, Oregon; further revised by William R. Fulton; and accepted by the Executive Committee, AECT Board of Directors, in November 1969.

The Certification Committee at the 1969 AECT Convention in Portland decided, in order to provide a historical touchstone regarding certification for audiovisual personnel, to conduct a nationwide survey of certification programs for audiovisual personnel in existence in the various states at the time the Guidelines for Certification of AV Personnel was published. The survey was conducted and then reported to the AECT Convention in Detroit in April 1970.

At the 1971 AECT Convention in Philadelphia, the Certification Committee decided to conduct another nationwide survey on the same topic--certification for audiovisual personnel in the United States. The results were reported to the 1972 AECT Convention in Minneapolis, Minnesota, as the second nationwide status report.

In each nationwide study, the investigation was designed to identify and provide information concerning Certification in those states:

1. That currently have a certification program in effect for AV personnel.

2. That do not currently have a certification program in effect for AV personnel.

3. In which no plans are being made for the certification program for AV personnel at this time.

4. In which plans are being made for certification programs for AV personnel that will become effective within the next one to three years.

For these studies, a single-page questionnaire was developed and mailed with a self-addressed, stamped envelope to each person listed on AECT's Roster of Chief State School Audiovisual Officers. One hundred percent of the questionnaires were marked and returned or the data was transmitted via telephone.

The 1976 questionnaire included not only the terminology "audiovisual personnel" but also "educational media" and "library personnel." This change in terminology reflects the emergence of professional preparation in the combined areas of audiovisual and library science reported in 1972. With this change, it was anticipated that the investigators could collect the appropriate data.

The 1968 Study

A nationwide survey conducted by William F. Grady in 1968 showed seven states with a certification program for audiovisual personnel. Those states were Indiana, Iowa, Minnesota, North Carolina, Pennsylvania, Utah, and Wisconsin.

In 1968, there were 10 states that indicated they were working on a certification program for audiovisual personnel and hoped to have it established in one to three years. Those 10 states were Arizona, Arkansas, Florida, Hawaii, Idaho, Nebraska, Ohio, Oklahoma, Vermont, and Washington.

The 1970 Study

By 1970, 14 states indicated they had certification programs for audiovisual personnel. Those states were Connecticut, Idaho, Indiana, Iowa, Minnesota, Montana, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Utah, and Wisconsin.

In 1970, there were 22 states that indicated they were working on a certification program for audiovisual personnel and hoped to have it established in one to three years. Those states were Arizona, Arkansas, Colorado, Delaware, District of Columbia, Florida, Georgia, Hawaii, Illinois, Kansas, Louisiana, Maryland, Michigan, New Hampshire,

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[1]Conducted by the AECT Certification Committee, William F. Grady and Minaruth Galey (Investigators). Members of the Certification Committee were: Clarence O. Bergeson, James W. Brown, Barbara Carson, John Childs, W. Edwin Erickson, Charles B. Klasek, Bruce McLaren, Al Nicosia, V. B. Rasmusen, Juanita Skelton, Walter Taranko, Marion W. Taylor, and Al Twiddy.

[2]Department of Audiovisual Instruction.

New Mexico, Oregon, Rhode Island, South Dakota, Texas, Vermont, Washington, and West Virginia.

The 1972 Study

By 1972, there were 22 states indicating they had certification programs for audiovisual personnel. These states were Arkansas, Connecticut, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Massachusetts, Minnesota, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Texas. Utah, Wisconsin, and Wyoming.

Nineteen states indicated they were working on certification and hoped to have a program in one to three years. Those states were Alabama, Arizona, Colorado, District of Columbia, Georgia, Kentucky, Louisiana, Maine, Maryland, Mississippi, New Hampshire, New Mexico, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, Washington, and West Virginia.

There were 10 states that did not have certification programs and were not working toward adoption of such at that time. Those states were Alaska, California, Delaware, Kansas, Michigan, Missouri, Montana, Nebraska, Nevada, and New Jersey.

Seven states indicated that professional preparation in the combined areas of audiovisual and library science was either required or strongly recommended. Those states were Florida, Illinois, North Carolina, North Dakota, Oregon, South Dakota, and Texas.

The 1976 Study

Because of the emergence in 1972 of combined preparation in print and nonprint areas and an apparent change in the terminology being used for certificates, the investigators in 1976 decided to include "educational media personnel" and "library personnel" as terms in the nationwide survey instrument. It was thought that from the use of these terms, in addition to the term "audiovisual personnel" used in the 1968, 1970, and 1972 studies, appropriate data could be collected from which a more accurate report could be compiled.

In 1976[3] there were eight states indicating they had a total of eleven certificates for AV personnel. These certificates did not include provisional or temporary certificates. These states were Illinois, Indiana, Minnesota, North Dakota, Oklahoma, Vermont, Wisconsin, and Wyoming.

There were 24 states that provided 39 certificates for educational or instructional media personnel, not including temporary or provisional certificates. These states were Alabama, Arkansas, Colorado, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Utah, and Vermont.

Two states, Missouri and Texas, used the title "learning resources personnel" on their certificates.

There were 34 states that provided a total of 54 certificates for school librarians, not including temporary or provisional certificates. These states were Alabama, Alaska, Arizona, Arkansas, California, Connecticut, District of Columbia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Mexico, North Dakota, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming. The titles of some certificates indicated a combined preparation. Maryland and North Dakota provided four certificates for AV-library personnel. Massachusetts provided one certificate for AV-media personnel.

Nine states provided eighteen certificates for personnel in media/library or library/media or library/learning resources. Those states were Delaware, Georgia, Iowa, Kentucky, Mississippi, Nevada, New York, Washington, and Wisconsin.

[3]The authors express their appreciation to G. Gardner Snow of Brigham Young University for his assistance in obtaining information from all 50 states.

TABLE 1

CURRENT AND PROJECTED STATUS OF CERTIFICATION OF PERSONNEL IN EDUCATIONAL COMMUNICATION AND TECHNOLOGY IN THE SEVERAL STATES

States	Certification Programs Effective Now	Plans Are Being Made To Require Certification in 1-3 Years	Revision in Process
Alabama	Media, Library		yes
Alaska	Library		
Arizona	Library		
Arkansas	Media, Library		
California	Library		
Colorado	Media		
Connecticut	Library		
Delaware	Library/Media		

STATES	CERTIFICATION PROGRAMS EFFECTIVE NOW	PLANS ARE BEING MADE TO REQUIRE CERTIFICATION IN 1-3 YEARS	REVISION IN PROCESS
District of Columbia	Library	for Media	
Florida	Media		
Georgia	Library/Media		
Hawaii	Media, Library		
Idaho	Media, Library		
Illinois	Audiovisual, Media, Library		
Indiana	Audiovisual, School Media, Library		
Iowa	Media, Library, Library/ Learning Resources		
Kansas	Library	for Media	yes
Kentucky	Media, Library, Media/Library		
Louisiana	Materials, Library		
Maine	Library	for Media/Library	
Maryland	Media, Library		
Massachusetts	AV/Media, Library		yes
Michigan	Library		
Minnesota	Audiovisual, Media, Library		
Mississippi	School Media		
Missouri	Media, Library, Learning Resources		
Montana	Library	for Media	
Nebraska	Media		
Nevada	Library/Media		
New Hampshire	Media		
New Jersey	Media		
New Mexico	Library		
New York	School Media		
North Carolina	Media		
North Dakota	Audiovisual, Library, Media, Library/AV		
Ohio	Media		
Oklahoma	Library, Media		yes
Oregon	Media		
Pennsylvania	Media, Library		

STATES	CERTIFICATION PROGRAMS EFFECTIVE NOW	PLANS ARE BEING MADE TO REQUIRE CERTIFICATION IN 1-3 YEARS	REVISION IN PROCESS
Rhode Island[1]	Library		
South Carolina	Library	for Media	
South Dakota	Library	for Media	
Tennessee	Library		
Texas	Learning Resources		
Utah	Media		
Vermont	Audiovisual, Media, Library		
Virginia	Library	for Media	
Washington	Library/Media		yes
West Virginia	Library	for Media/Library	
Wisconsin	Audiovisual, Library		yes
Wyoming	Audiovisual, Library		

[1]Rhode Island had no plans to require certification in Media.

Note: Since no states reported "No Certification Program Effective Now" in the 1976 survey, that column heading--which appeared in similar tables in previous Certification reports--is not included in this table.

A comparison of the titles of the certificates with the preparation requirements revealed a wide variation. For example, it is possible to obtain a Library/Media certificate with preparation only in librarianship. Table 2 summarizes the data on the preparation requirements and the titles of the certificates.

SUMMARY OF PREPARATION REQUIREMENTS FOR CERTIFICATES
TABLE 2

TITLE OF CERTIFICATE	TOTAL NO. OF CERTIFICATES	NO. OF CERTIFICATES W/NO LIBR REQ	NO. OF CERTIFICATES W/LIBR & MED REQ	NO. OF CERTIFICATES W/NO MEDIA REQ	NO. OF CERTIFICATES W/NO SPECIFIED REQUIREMENT
Audiovisual Personnel	11	6	3	0	2
Library Personnel	54	0	8	32	14
Ed. Media Personnel	39	9	20	0	10
Learning Resources Personnel	2	0	1	0	1
AV Library Personnel	4	0	1	0	3
AV Media Personnel	1	0	1	0	0
Media/Library Personnel	17	0	12	2	3
Totals	128	15	46	34	33

Table 3 (page 16) presents the characteristics of the currently existing state certification programs for educational communications and technology personnel.

Findings, Summary, and Conclusions

In every state there is certification for personnel who work in some aspect of educational communication and technology. These certificates may be entitled "audiovisual," "educational media," "library," "learning resources," or some combination of these terms.

Of the 39 available library certificates that specify requirements, 32 (82%) have no media requirements. Seven (18%) have media design and production requirements. Of the 29 available certificates for educational media personnel that specify requirements, nine (31%) have no library requirements. Twenty (69%) have both library and media requirements. Of the 17 certificates with combination titles that specify requirements, 14 (82%) have some preparation in both library and media. Certificates for personnel with the title "learning resources" have requirements in both library and media.

Of the 24 educational media certificates that require teaching experience as a prerequisite for the issuance of an educational media certificate, nine (38%) require less than one year of teaching experience, and student teaching is usually the experience designated. The remaining 62% require one year or more with one certificate requiring one year, four requiring two years, nine requiring three years, and one requiring five years.

Of the 29 library certificates that require teaching experience as a prerequisite for the issuance of a librarian certificate, 22 (76%) require less than one year of experience and student teaching is usually the experience designated. The remaining 24% require one year or more with four certificates requiring three years, one requiring four years, and two requiring five years. Those that require more than one year of experience are usually supervisory, advanced, professional, or director types of certificates.

Several conclusions can be drawn from the 1976 survey:

1. Certification continues to be an issue of concern in a majority of the states.

2. Certificates for educational media specialists typically identify workers with competencies in the three areas of media management, media product development, and instructional program development.

3. While certificates with combination titles reflect professional preparation in both library and educational media, at this time the preparation in library is considerably more extensive than preparation in educational media.

4. Certificates for librarians typically identify workers as specialists with competencies in media management inasmuch as 82% of the certificates require no media product or program development competencies.

5. It appears that educational media specialists and librarians are different kinds of workers. Librarians have specialized competencies concentrated in media management, in terms of the AECT Certification Model, and educational media personnel are in media product development, instructional program development, and media management.

6. An analysis of the professional preparation requirements listed in the educational media certification documents that specify library science competencies reveals that the majority of those competencies are in the areas of selection, utilization, evaluation, classification, and cataloging of learning resources at the minimal entry level.

7. An analysis of the professional preparation requirements listed in those seven library certification documents that specify educational media competencies reveals that the competencies are in the areas of media design, production, and utilization at the minimal entry level.

8. Based on the years of teaching experience required for an educational media certificate (62% require one or more years in the classroom), it appears that the role of the educational media specialist continues to be directly related to instructional support and classroom instructional activities.

TABLE 3

CHARACTERISTICS OF STATE CERTIFICATION PROGRAMS FOR
EDUCATIONAL COMMUNICATIONS AND TECHNOLOGY PERSONNEL

STATE	NAME OF CERTIFICATE	DEGREE	CERTIFICATE REQUIRED	EXPERIENCE (YEARS)	NUMBER OF HOURS IN EDUCATIONAL MEDIA	NUMBER OF HOURS IN LIBRARY SCIENCE	NUMBER OF HOURS IN RELATED AREAS
Alabama	Class B Elementary-Secondary Professional Certificate						
	Educational Media	Bacc.	teacher		Major, 24 sh		86
	Library Science	Bacc.	teacher			Major, 24 sh	
Alaska	Type A, Regular Certificate School Librarian	Bacc.	teacher			Institutional recommendation	
	Type C, Special Services Certificate, Library	Bacc.					
Arizona	School Librarian (K-12) LEN (Library endorsement)		teacher			18 sh	
Arkansas	Media Specialist (K-12)	Bacc.	teacher	student teaching	12 sh		
	Librarian (K-12)	Bacc.	teacher	student teaching		18 sh	
California	Library Services Credential School Librarian	Bacc.	teacher	4 sh supervised field experience		24 sh	
Colorado	Educational Media Specialist	Masters or higher	teacher	3 yrs teaching and/or school media experience	combined		
Connecticut	Special Subject or Field Library Endorsement	Bacc.	teacher			18 sh	17 sh
Delaware	Library/Media Specialist Standard Certificate	Bacc.	teacher (or 15 sh in Education)			Teacher Education program in LS or Masters in School Librarianship or 24 sh and 6 sh practicum or 1 yr experience + 6 sh	

TABLE 3 (Continued)

STATE	NAME OF CERTIFICATE	DEGREE	CERTIFICATE REQUIRED	EXPERIENCE (YEARS)	NUMBER OF HOURS IN EDUCATIONAL MEDIA	NUMBER OF HOURS IN LIBRARY SCIENCE	NUMBER OF HOURS IN RELATED AREAS
District of Columbia	School Librarian						
	Senior	MLS	teacher	practice teaching		Masters	
	Elementary	BA	teacher	practice teaching		18 sh	
	Junior	BA	teacher	practice teaching		18 sh	
	Vocational	MLS	teacher	practice teaching		Masters	
Florida	Educational Media Specialist (K-12)	Bacc.			24 sh combined		
Georgia	Associate Library Media Specialist	Bacc.	teacher			20 qh	
	T-5 Career Library Media Specialist	Masters	teacher		25 qh combined		10 qh
Hawaii	School Library Specialist						
	Basic Specialist	Bacc.		student teaching or 1 yr	9 sh	21 sh	18 sh
	Professional Specialist	Bacc. + 30 sh		student teaching or 1 yr	9 sh	21 sh	24 sh
	Media Specialist						
	Basic Specialist	Bacc.		student teaching or 1 yr	21 sh	9 sh	18 sh
	Professional Specialist	Bacc. + 30 sh		student teaching or 1 yr	21 sh	9 sh	24 sh
Idaho	Educational Media Generalist	Bacc.	teacher		24 sh		6 sh
	School Librarian	Bacc.	teacher			15 sh	
Illinois	Instructional Media Specialist	Bacc.	teacher	student teaching	12 sh (AV)	15 sh	
	School Librarian	Bacc.	teacher	student teaching		18 sh	
	Audiovisual Coordinator	Bacc.	teacher	student teaching	18 sh (AV)		
	Media Specialist	Bacc.	teacher or standard special w/ media endorsement	student teaching	32 sh combined		
	School Library Specialist	Bacc.	teacher or standard special w/ school librarian endorsement	student teaching		32 sh	
	(continued next page)						

TABLE 3 (Continued)

STATE	NAME OF CERTIFICATE	DEGREE	CERTIFICATE REQUIRED	EXPERIENCE (YEARS)	NUMBER OF HOURS IN EDUCATIONAL MEDIA	NUMBER OF HOURS IN LIBRARY SCIENCE	NUMBER OF HOURS IN RELATED AREAS
Illinois (Cont'd)	Audiovisual Specialist	Bacc.	teacher or standard AV special endorsement				
	Media Supervisor or Director	Bacc.	supervisory or standard special w/media or general endorsement		32 sh combined		
Indiana	School Media Services						
	Basic	Bacc.			36 UG sh combined		
	Professional		basic			6 G sh	
	Audiovisual Services						
	Basic	Bacc.			24 UG sh combined		
	Professional		basic			6 UG sh, 6 G sh	
	Instructional Supervision in School Media Services						
	Basic	Bacc.	teacher		advanced combined		15 G sh
	Professional		basic	3 yrs			
	Library Services						
	Basic	Bacc.				24 UG sh	
	Professional		basic		6 UG sh 6 G sh (AV)		
Iowa	School Librarian	Bacc.	teacher	student teaching			
	Director, Library Services	Masters	teacher				6 sh
	Library/Learning Resources Specialist	Masters					
	Educational Media Specialist	Masters	teacher		major		
	Teacher-Librarian					20 sh	
Kansas	Secondary School Librarian						
	fewer than 500		teacher		15 sh combined		
	more than 500		teacher		24 sh combined		
	Elementary School Librarian		teacher		15 sh combined		

TABLE 3 (Continued)

STATE	NAME OF CERTIFICATE	DEGREE	CERTIFICATE REQUIRED	EXPERIENCE (YEARS)	NUMBER OF HOURS IN EDUCATIONAL MEDIA	NUMBER OF HOURS IN LIBRARY SCIENCE	NUMBER OF HOURS IN RELATED AREAS
Kentucky	School Media Librarian provisional	Bacc.			30 sh combined		47 sh
	School Media Specialist standard	Masters	provisional SML		15-21 sh combined		6-15 sh
	Media Supervisor	60 G sh (with Masters)	standard SMS	3 yrs	6-9 sh combined		12 sh
Louisiana	School Library Service		teachers			18 sh	
	Supervisor of School Libraries	Masters	Type A	5 yrs, library		18 UG sh, 12 G sh	
	Supervisor of Parish or City Materials and/or Media Centers	Advanced degree	Type A	5 yrs	12 G sh		
Maine	School Librarian Provisional	Bacc. in school library or teachers certificate				18 UG sh	
	Professional	Bacc. + 30 sh		4 yrs			
Maryland (competency based)	Ed Media (AV/Library) Associate Level I	Bacc.		practicum			
	Generalist Level II	Masters or 36 G sh		practicum			
	Ed Media Specialist in Level II	Masters or 36 G sh		practicum			
	Ed Media (AV/Library) Administrator Level III	Masters in Ed Media + 15 G sh	Generalist Level II	3 yrs media experience			
	Librarian Elementary	Bacc. + 18 sh	teacher	supervised observation in school library or student teaching			12 sh
	Secondary	Bacc. + 18 sh	teacher	supervised observation in school library or student teaching			12 sh
	Secondary-Elementary	Bacc. + 24 sh	sec school librarian				6 sh
	Elementary-Secondary	Bacc. + 24 sh	elem school librarian				6 sh

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TABLE 3 (Continued)

STATE	NAME OF CERTIFICATE	DEGREE	CERTIFICATE REQUIRED	EXPERIENCE (YEARS)	NUMBER OF HOURS IN EDUCATIONAL MEDIA	NUMBER OF HOURS IN LIBRARY SCIENCE	NUMBER OF HOURS IN RELATED AREAS
Maryland (Cont'd)	Supervisor of School Libraries	MLS	elem or sec school librarian	3 yrs school library			
Massachusetts	AV Media Specialist	Bacc. + 30 sh	teacher		combined		
	School Librarian	Bacc. + 18 sh					12 sh
Michigan	School Librarian	Bacc. + 20 sh	teacher				
Minnesota	Director of A/V Education	Bacc.	teacher	2 yrs teaching	10 sh		
	Coordinator of A/V Education		teacher				
	Librarian		teacher			minor	
	Media Generalist	Bacc.	teacher	2 yrs teaching	36 gh		
	Media Supervisor	Masters	media generalist	3 yrs media	combined		
Mississippi	School Media Specialist Librarian						
	Class AAAA	Doctorate	Class AAA		combined major		
	Class AAA	Masters + 45 sh	Class AA	3 yrs media specialist libr	combined		
	Class AA	Masters	Class A		combined		
	Class A	Bacc.			30 sh combined		
	Class A Permit	Bacc.			12 sh combined		
Missouri	Learning Resources Director	Masters	elem or sec teacher, instructional media technologist school librarian	2 yrs as media/ librarian			
	Instructional Media Technologist	Bacc.	elem or sec teacher		18 UG or G sh		
	School Librarian	Bacc.	elem or sec teacher			18 G or UG sh	
Montana	School Librarian						
Nebraska	Educational Media Specialist						

TABLE 3 (Continued)

STATE	NAME OF CERTIFICATE	DEGREE	CERTIFICATE REQUIRED	EXPERIENCE (YEARS)	NUMBER OF HOURS IN EDUCATIONAL MEDIA	NUMBER OF HOURS IN LIBRARY SCIENCE	NUMBER OF HOURS IN RELATED AREAS
Nevada	Teacher Library Media Specialist	Bacc.	teacher		20 sh combined		
	Library Media Specialist	Bacc. or teacher library/media + 8 sh in libr media			combined		
	Professional Library Media Specialist	Masters	library media specialist		combined		
New Hampshire	Media Generalist	Bacc.			combined		
	Media Educational Associate	2 years					
	Media Supervisor	Masters		3 yrs media	combined		
New Jersey	Associate Educational Media Specialist	Bacc.	teacher		18 sh combined		
	Educational Media Specialist	Masters	teacher	1 yr teaching or media	30 G sh combined		
New Mexico	Elementary Librarian		elem teacher			18 sh	
	Secondary Librarian		sec teacher			18 sh	
	All-level Librarian		elem/sec teacher			24 sh	
New York	School Media Specialist (library)						
	Provisional	Bacc.		practicum	36 sh combined		12 sh
	Permanent	Bacc. + 30 sh		practicum	36 sh combined		12 sh
	School Media Specialist (Ed Communications)						
	Provisional	Bacc.		practicum	36 sh combined		12 sh
	Permanent	Bacc. + 30 sh		practicum	36 sh combined		12 sh
North Carolina	Media Coordinator	Masters			combined--competency-based		
	Media Specialist	Sixth Year			combined--competency-based		
North Dakota	Library only	Bacc.	teacher	classroom teaching recommended		16 sh minor	
	Audiovisual only	Bacc.	teacher	classroom teaching recommended	12 sh combined		
	(continued next page)						

TABLE 3 (Continued)

STATE	NAME OF CERTIFICATE	DEGREE	CERTIFICATE REQUIRED	EXPERIENCE (YEARS)	NUMBER OF HOURS IN EDUCATIONAL MEDIA	NUMBER OF HOURS IN LIBRARY SCIENCE	NUMBER OF HOURS IN RELATED AREAS
North Dakota (cont'd)	Library/Audiovisual Combination	Bacc.	teacher	classroom teaching recommended	10 sh	16 sh	
	Media Director	Masters	teacher, library/ AV combination	classroom teaching recommended			12 sh
Ohio	Educational Media	Bacc.	teacher	student teaching + practicum	30 sh combined		
	Educational Media Elementary School only	Bacc.	elem teacher		20 sh combined		
Oklahoma	Professional School Librarian	Masters	teacher	3 years			
	Librarian (public school) Standard Certificate						
	Provisional	Bacc.	teacher	3 years		18 sh	15 sh
	Temporary					18 sh	12 sh
	Audio Visual Specialist						
	Standard	Bacc.	teacher		15 G sh combined		
	Provisional	Bacc.	teacher		10 G sh combined		
	Temporary	Bacc.	teacher		8 G sh combined		
Oregon	Basic Educational Media	Bacc.			21 qh		
	Standard Educational Media	Masters or Bacc. + 45 qh	basic	2 yrs teaching			
Pennsylvania	Library Science (K-12)	Bacc.	teacher	practicum in library & classroom			
	Elementary Library Science (K-8)	Bacc.		practicum with young children			
	Instructional Media Specialist	Bacc. +	perm teacher	2 yrs teaching			
Rhode Island	Library Science						
	Provisional	Bacc.		practice teaching (2+ yrs in classroom)		18 sh	18 sh
	Professional	Bacc. + 36 sh or Masters		3 yrs library		24 G sh	18 G sh

TABLE 3 (Continued)

STATE	NAME OF CERTIFICATE	DEGREE	CERTIFICATE REQUIRED	EXPERIENCE (YEARS)	NUMBER OF HOURS IN EDUCATIONAL MEDIA	NUMBER OF HOURS IN LIBRARY SCIENCE	NUMBER OF HOURS IN RELATED AREAS
South Carolina	Teaching Librarian	Bacc.		(Nat'l Tchrs Exam)		18 sh	18 sh
	School Librarian	Bacc.		(Nat'l Tchrs Exam)		24 sh	18 sh
South Dakota	School Librarian	Bacc.	teacher			major	
Tennessee	School Librarian	Bacc.	teacher			27 qh	
Texas	Learning Resources Specialist						
	Professional	Bacc.	teacher	3 yrs teaching	9 UG sh, 27 G sh combined		
	Endorsement	Bacc.	teacher	practicum	21 sh combined		
Utah	Instructional Media						
	Basic Professional	Bacc.	teacher				
	Professional	Masters or 55 qh	teacher	3 yrs as educator incl 1 yr media			
Vermont	Media Generalist	Masters or 5th year	teacher	3 yrs required, teaching preferred	competencies		
	Library Specialist		teacher			competencies + 15 sh	
	Audiovisual Specialist		teacher		competencies + 15 sh		
	Media Paraprofessional	State Board Policy pp. 93-94					
Virginia	Library Science			practicum		18 sh	
Washington	Library Media Specialist		teacher		consortium-based		
West Virginia	School Librarian			student teaching		21 sh	
Wisconsin	Audio-Visual Director	Bacc.	teacher	3 yrs teaching	12 sh		3 sh
	AV Building Coordinator	Bacc.	teacher		5 sh		
	Librarian		teacher	student teaching	22 sh combined		
	School Library Supervisor	Masters + 3 courses		5 yrs library			

TABLE 3 (Continued)

STATE	NAME OF CERTIFICATE	DEGREE	CERTIFICATE REQUIRED	EXPERIENCE (YEARS)	NUMBER OF HOURS IN EDUCATIONAL MEDIA	NUMBER OF HOURS IN LIBRARY SCIENCE	NUMBER OF HOURS IN RELATED AREAS
Wyoming	Audiovisual						
	Initial	Bacc.		1 yr teaching desired	12 sh		
	Standard		teacher + initial		6 sh		
	Professional	Masters, AV					
	Library						
	Initial	Bacc.				14 sh	
	Standard		teacher + initial			6 sh	
	Professional	Masters with 50% library science					

Note: Terminology on the chart is taken directly from certification documents published by the states and, as is evident, varies from state to state.

The following abbreviations are used in Table 3: sh - semester hour; qh - quarter hour; Bacc. - baccalaureate, bachelors degree; A/V - audiovisual; G - graduate; UG - undergraduate.

APPENDIX

GUIDELINES FOR THE CERTIFICATION OF PERSONNEL IN EDUCATIONAL COMMUNICATIONS AND TECHNOLOGY

This appendix presents the background and rationale underlying the certification model presented in chapter 2. The Competency and Task List, from which the current model is derived, is also included. These materials were originally published in the November 1974 issue of Audiovisual Instruction, which is now out of print. The information reprinted here is useful for a full understanding of the origin and structure of the certification model.

The Competency and Task List was adapted from the Final Report: Jobs in Instructional Media Study by Hyer, et al. The list is not intended to be all inclusive. Rather, it is representative of the competencies and tasks associated with the nine functions identified in the Silber Domain of Instructional Technology Model, as shown in Figure 1 of the articles by William C. Prigge (page 29).

The Worker Instruction Level for each task is indicated by the number preceding the task statement. For the "specialist," levels 5 — 8 are shown. For "technicians," levels 3 — 5 are listed. In some instances, tasks have not been assigned a level because the specialist or technician may not be responsible for actually performing the activity, but must be familiar with it.

ACCREDITATION AND CERTIFICATION: A REPORT

WILLIAM F. GRADY
CLARENCE O. BERGESON

Since AECT's inception as an organization, its members have expressed concern about the preparation of new personnel in the field of educational communications and technology. This concern led to questions about preparation programs and it focused on the need to identify qualified personnel once they started operating in schools.

The intensity of this concern prompted AECT President Robert Heinich (in December 1971) to appoint two task forces: one to work on problems pertaining to certification of educational communications and technology personnel, and the other to develop recommendations regarding problems in the accreditation of educational communications and technology preparation programs. Those named to work on these two task forces were as follows:

Certification Task Force
- James Brown
- William Grady (Chairman)
- Roland Mergener

Accreditation Task Force
- Clarence Bergeson (Chairman)
- Gerald LaMarsh
- William Prigge

In the execution of their assignments, the two task forces conducted an intensive three-year research and study effort. While the two task forces worked together on problem areas of mutual concern, each pursued its own separate and discrete assignment.

Review of Literature

A review of all available literature and research findings related to the certification of personnel and the accreditation of programs was made. This literature included AECT's *Guidelines for the Certification of AV Personnel;* USOE's *Jobs in Instructional Media Study;* USOE's *Curriculum Guidelines for Library Technical Assistants;* the Media Guidelines Project; AECT's *Guidelines for Certification of Media Specialists;* and ALA's School Library Manpower Project, including the *Behavioral Requirements Activity Checklist* (BRAC) publication. Works and publications of the former Professional Education of Media Specialists (PEMS) Commission and the current Committee on Definition and Terminology were used. Also reviewed were applicable writings of Hoban, Finn, Heinich, Hyer, and Silber.

Working Sessions

During the three-year study, the two task forces held 15 working and open hearing sessions involving more than 700 educators from public and private schools (K-12 and university) as well as industry, government, and commerce. Ten specific working sessions were held to plan, to synthesize collected data, to review drafts and working papers, and to rewrite. These working sessions were held in May 1972 at the National Convention in Minneapolis, Minnesota; in October 1972 in San Jose, California; in January 1973 at the Northeast Regional Leadership Conference in Newport, Rhode Island; in March 1973 in Washington, D.C.; in April 1973 at the National Convention in Las Vegas, Nevada; in October 1973 in Kerhonkson, New York; in November 1973 in Washington D.C.; in January 1974 in Washington D.C.; in March 1974 at the National Convention in Atlantic City, New Jersey; and in August 1974 in Washington D.C.

Open Hearings

Five special open hearing sessions designed specifically to solicit reactions and feedback from both selected individuals and AECT's membership at large were conducted. One of these sessions was held in San Jose in October 1972, and was attended by 20 persons selected because of their recognized expertise in educational media. The at-

tendees were representatives of educational settings ranging from public schools (K-12) to colleges and universities, along with representatives from industry, commerce, and government on the west coast.

A second special session, conducted on the east coast in March 1974, was attended by 40 persons. The selection of these individuals was based on their recognized expertise in the field, the educational setting in which they were currently employed, and the geographic location of their place of employment. Special effort was made to obtain a group broadly representing the total membership of AECT. Three weeks before the meeting those to attend received working drafts of the guideline documents for their critical review and analysis. They then met in an all-day Saturday seminar in Atlantic City.

Three sessions to solicit feedback and reactions from the membership at large were conducted. The first was held at the Northeast Regional Leadership Conference in January 1973 in Newport, Rhode Island, with 80 persons in attendance. The second was held at the National Convention in April 1973 in Las Vegas, with 240 persons in attendance. The third and final meeting was held at the National Convention in March 1974 in Atlantic City, with 320 persons in attendance.

Written Responses

Additional feedback and reactions were forthcoming as a result of action taken by the Board of Directors at the Convention in Las Vegas. An interim report was made, and it was accepted by the Board with the directive to continue the task forces for another year. This report was subsequently published in the May 1973 issue of *AVI*, and written responses were received by the respective chairmen of the two Task Forces.

Continuing Concerns

Three documents were developed by the two task forces as a result of these deliberations. Joint deliberations resulted in the development of a usable frame of reference. (See page 28) This framework provided a base for each of the task forces as they formed guidelines for the certification of personnel by state departments of education (see page 35).

The task forces did not determine that the acceptance of these guidelines would satisfy all of AECT's concerns in the areas of certification and accreditation. Rather, it was felt that ongoing study and effort was needed.

The Certification Task Force saw a need to monitor the effect guidelines would have on the field and the impact future changes in the field might have on Certification Guidelines. Several areas of certification had to be left unresolved. Among these were the certification of personnel from two-year college programs, the certification of aides, and the question of whether or not there is a role for technicians in the instructional program development area. Finally, but certainly of major importance, the Certification Task Force voiced a need for future efforts at implementing these guidelines at the state department of education level throughout the country.

The Accreditation Task Force also felt a concern about the impact Accreditation Guidelines might have in the field, and therefore saw a need to monitor the use and the usefulness of such guidelines. One area of accreditation requires further study. Two-year programs are developing in many community colleges and other higher educational institutions. The possibility for accreditation of such programs needs investigation, and appropriate recommendations about such programs ought to be developed. Finally, the application of guidelines to advanced higher education programs, and the use of a frame of reference such as that presented here highlight the possibilities of a guide to curricular development in the field of educational communications and technology. Future development of such a guide was recommended and approved by the Board of Directors.

The products of the two task forces are presented in the following sections. The frame of reference is explained in detail. Guidelines for Certification are then presented, followed by Accreditation Guidelines for Advanced Programs in Educational Communications and Technology. Finally, a list of competencies and tasks appropriate to the areas and levels of responsibility in this field are provided.

***William F. Grady** is chairman, Division of Educational Communications, College of Education, Temple University, Philadelphia, Penna. **Clarence O. Bergeson** is professor of Educational Communications, State University of New York at Albany.*

ACCREDITATION AND CERTIFICATION: A FRAME OF REFERENCE

WILLIAM C. PRIGGE

What is the field of educational communications and technology? What do workers in the field do? What tasks are performed? How should workers for the field be prepared? Should these workers be certified? How? How does one judge the adequacy of the preparation programs? These and similar questions have been the topic of discussion for the last 20 years by members of AECT.

In December 1971, then AECT President Robert Heinich appointed two task forces—a Task Force on Certification and a Task Force on Accreditation. These task forces were charged to develop basic guidelines for the certification of educational communications and technology personnel, and to develop guidelines for the accreditation of programs for the preparation of such personnel.

It became immediately apparent to the members of the task forces that before they could develop such guidelines a basic frame of reference, or rationale, had to be established. What follows is the frame of reference developed by the two task forces.

What is the field of educational communications and technology?

The Committee on Definition and Terminology, in the October 1972 issue of *AVI*, presented a detailed definition of the field. This definition, in turn, was based on the writings of Finn, Hoban, Heinich, Silber, and others. Because the Silber model, as shown in his May 1971 article in *AVI*, is a simplified, graphic illustration of the more detailed committee report, it is used here as the definition of the field of educational communications and technology. This model is shown in Figure 1. The definitions of the elements of the model are shown in the Table of Function Definitions.

How are jobs in the field of instructional technology performed?

Two major studies, the *Jobs in Instructional Media Study* (JIMS), and the Library Manpower Study, have attended to this question. In order to look at media jobs, as they are performed, the JIMS examined two major aspects simuitaneously—*what the worker does* and *what gets done*.

The Domain of Instructional Technology, as shown in Figure 1, was used by JIMS as a way of looking at *what gets done* in the field. The technique of Functional Job Analysis (FJA) was adopted to study *what the worker does*. Of primary interest to this frame of reference is the Scale of Worker Instructions (WI) as shown on page 32.

JIMS decided that it was logical to classify personnel into three levels which they labeled as Entry, Middle, and Advanced. Originally the three levels were labeled as Aide, Technician, and Specialist. This was consistent with job classifications in the field. However, there was and is some confusion as to the meaning of "technician". For purposes of this discussion, "technician" refers to middle-level personnel (WI 3-5)*, and not to a highly skilled person such as a broadcast engineer, graphic designer, cinemaphotographer, or television producer-director.

To further clarify the situation, the following definitions from the JIMS are presented:

ENTRY: (Aide) (WI 1-3)

Entry Level personnel have *specific instructions* about the tasks they perform. The task may be only part of a process, the other parts of which the worker cannot or does not control. Entry Level personnel can be trained for a task in a relatively short period of time, since almost everything they need to know is con-

*WI refers to Scale of Worker Instructions as shown in the table on page 32

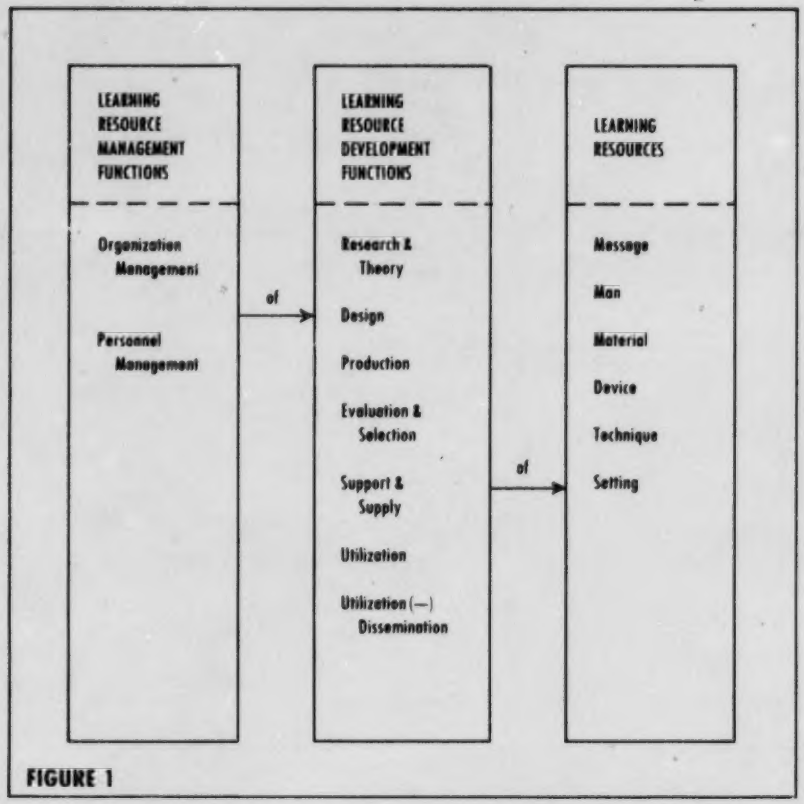

FIGURE 1

tained in the task. They are not required to solve problems external to the task. If something happens which is not covered by the instructions, the Entry Level worker asks for help and cannot be held responsible for solving the problem.

MIDDLE: (Technician) (WI 3-5)

Middle Level personnel have instructions which deal more with a cluster of tasks leading to a *specified output or outcome*. They have a broader view of the situation and are expected to generalize more from task to task than personnel at the Entry Level. The Middle Level worker is responsible for the product as long as all of the routines necessary to reach the output have been specified and made available to him.

ADVANCED: (Specialist) (WI 5-8)

Advanced Level personnel do not have tasks specified. They are *responsible for solving a general problem* and must determine what the product should be as well as how to achieve it. Having defined the goals, they are often forced to develop the routines of tasks necessary to achieve the goals. They deal with a broad process approach.

After careful study of the preceding definitions, it becomes apparent that the various functions, as shown in Figure 1, can be clustered into three major areas of responsibility. These are: media management, media product development, and instructional program development. Also three levels of complexity, based on the definitions used, can be identified as aide, technician, and specialist.

What competencies should workers in the field of educational communications and technology possess?

A number of publications have attempted to answer this question. The AECT *Guidelines for Certification of Media Specialists*, the *Jobs in Instructional Media Study* (including tasks from the Media Guidelines Project), the School Library Manpower Project, the *Behavioral Requirements Activities Checklist*, and the USOE curriculum guidelines for Library Technical Assistants all present lists of competencies and lists of tasks performed by media personnel. None of

INTERRELATEDNESS OF AREAS OF RESPONSIBILITY AND LEVEL OF COMPLEXITY

LEVELS OF COMPLEXITY	WI	Media Management	Media Product Development	Instructional Program Development
Aide	1 2 3			
Technician	3 4 5			
Specialist	5 6 7 8			

FIGURE 2

TABLE OF FUNCTION DEFINITIONS

LEARNING RESOURCE DEVELOPMENT FUNCTIONS (LRDF)
Functions which have as their purpose the application of Learning Resources (LR) to solve instructional problems.

FUNCTION	DEFINITION	EXAMPLES
Research		
Purpose:	To generate and test knowledge (theory and research methodology) related to the LRs and to learners.	To conceptualize theoretical models. To conduct research projects. To analyze research data.
Outcome:	Knowledge which can act as an input to the other functions.	To generate new ideas. To run reality test of model. To test hypothesis.
Activity:	Seeking information, reading it, analyzing it, testing it, analyzing test results.	Reads proposal. Compares model with known data. Formulates specific hypotheses.
Design		
Purpose:	To translate general theoretical knowledge into specific LR specifications.	To design programed instruction materials. To develop instructional packages for individualized instruction. To design equipment systems.
Outcome:	Specifications for production of LRs, regardless of form.	To write general objectives. To determine media. To describe technical systems.
Activity:	Analyzing, synthesizing, and writing objectives, learner characteristics, task analysis, learning conditions, instructional events, media specifications.	Analyzes objectives. Synthesizes objectives/sequence/content/media. Arranges materials in sequence.
Production		
Purpose:	To translate LR specifications into specific, concrete LRs.	To produce audiotapes. To produce/direct motion picture. To write computer programs for computer-assisted instruction.
Outcome:	Specific products in the form of prototypes, final versions, or mass-produced versions.	To make slides into filmstrips. To decide on music/sound effects. To match audio and visuals.
Activity:	Operating production equipment, drawing, laying out, writing, building products.	Mixes narration tape and sound. Sequences slides using viewer. Operates motion picture camera.
Evaluation & Selection		
Purpose:	To assess acceptability of produced LRs in terms of criteria set by other functions, and to develop models for this assessment.	To pilot test prototype instructional materials. To preview and select instructional materials. To develop evaluation models and techniques.
Outcome:	Evaluation for design: effectiveness of LRs in meeting objectives. Evaluation for production: acceptability of LRs in meeting production standards. Evaluation for management: acceptability of LRs for purchase. Evaluation for utilization: acceptability of LRs for meeting user objectives. Evaluation for evaluation: evaluation models.	To identify problems with materials. To identify objectives not met. To insure quality sound.
Activity:	Analyzing quality in terms of standards.	Observes students using materials. Analyzes possible uses of materials. Compares data and objectives.
Support & Supply		
Purpose:	To make LRs available for other functions.	To have equipment ready as needed. To provide delivery service. To catalog materials.

FUNCTION	DEFINITION	EXAMPLES
Outcome:	Ordered, stored, classified, cataloged, assembled, scheduled, distributed, operated, maintained, and repaired LRs.	To cross-index materials. To locate materials for delivery. To maintain repair history. To repair filmstrip projector.
Activity:	Ordering, storing, classifying, cataloging, assembling, scheduling, distributing, operating, maintaining, repairing LRs.	Threads movie projector. Assigns code from accession list. Plans new scheduling system.
Utilization Purpose:	To bring learners into contact, whether formal or informal, with LRs.	To help student use learning activity. To monitor individualized and self instruction. To help student select learning activities and to meet objectives.
Outcome:	Facilitation and assessment of student learning.	To analyze student learning style. To present information. To encourage interest in learning activity.
Activity:	Assigning, preparing learner for, presenting, assisting, and following up LRs.	Discusses with student. Compares activities/learning style. Compares pre- and post-tests.
Utilization—Dissemination Purpose:	To bring learners into contact, whether formal or informal, with information about instructional technology.	To consult on media use and design. To maintain professional status in the field. To explain individualized instruction project to visitors.
Outcome:	Dissemination of information about instructional technology.	To answer questions about project. To learn issues/new knowledge. To demonstrate Super 8 operation.
Activity:	Taking in and giving out information about instructional technology.	Demonstrates movie projector operation. Discusses with teacher. Defines media services available.

LEARNING RESOURCES MANAGEMENT FUNCTIONS (LRMF)

Functions which have as their purpose the guiding, facilitating, or controlling of the Learning Resources Development Functions (LRDF) or of other LRMFs to ensure their effective operation.

FUNCTION	DEFINITION	EXAMPLES
Organization Management Purpose:	To determine, modify, or execute the objectives, philosophy, policy, structure, budget, internal and external relationships and administrative procedures of an organization performing one or several of the LRDFs or the LRMFs.	To administer/direct project. To monitor and change operation of center. To provide secretarial services in AV center.
Outcome:	Policy, budget, plans, coordinated activities, administrative operations.	To prepare repair list. To identify organization needs. To ascertain jobs to be done.
Activity:	Defining, writing, and carrying out procedures leading to the outcomes.	Reviews purchase orders. Designs new organizational model. Analyzes problems in project.
Personnel Management Purpose:	To interact with and/or to supervise the people who perform the functions.	To supervise personnel in graphics unit. To improve communications between technicians and artists. To staff projects.
Outcome:	Interpersonal interaction, discussion, supervision, employment, and personal development.	To evaluate work performed. To encourage discussion. To call repairman.
Activity:	Discussing with and speaking to other people.	Negotiates with personnel department. Questions applicants. Talks with new employees.

SCALE OF WORKER INSTRUCTIONS

	LEVEL	DEFINITION
AIDE	1	Inputs, outputs, tools, equipment, and procedures are all specified. Almost everything the worker needs to know is contained in his assignment. He is supposed to turn out a specified amount of work or a standard number of units per hour or day.
AIDE	2	Inputs, outputs, tools, and equipment are all specified, but the worker has some leeway in the procedures and methods he can use to get the job done. Almost all the information he needs is in his assignment. His production is measured on a daily or weekly basis.
AIDE / TECHNICIAN	3	Inputs and outputs are specified, but the worker has considerable freedom as to procedures and timing, including the use of tools and equipment. He has to refer to several standard sources for information (handbooks, catalogs, wall charts). Time to complete a particular product or service is specified, but this varies up to several hours.
TECHNICIAN	4	Output (product or service), is specified in the assignment, which may be in the form of a memorandum or a schematic (sketch or blueprint). The worker must work out his own ways of getting the job done, including selection of tools and equipment, sequence of operations (tasks), and obtaining important information (handbooks, etc.). He may either carry out work himself or set up standards and procedures for others.
TECHNICIAN / SPECIALIST	5	Same as (4) above, but in addition the worker is expected to know and employ theory so that he understands the whys and wherefores of the various options that are available for dealing with a problem and can independently select from among them. He may have to do some reading in the professional and/or trade literature in order to gain this understanding.
SPECIALIST	6	Various possible outputs are described that can meet stated technical or administrative needs. The worker must investigate the various possible outputs and evaluate them in regard to performance characteristics and input demands. This usually requires his creative use of theory well beyond referring to standard sources. There is no specification of inputs, methods, sequences, sources, or the like.
SPECIALIST	7	There is some question as to what the need or problem really is or what directions should be pursued in solving it. In order to define it, control and explore the behavior of the variables, and formulate possible outputs and their performance characteristics, the worker must consult largely unspecified sources of information, and devise investigations, surveys, or data analysis studies.
SPECIALIST	8	Information and/or direction comes to the worker in terms of needs (tactical, organizational, strategic, financial). He must call for staff reports and recommendations concerning methods of dealing with them. He coordinates both organizational and technical data in order to make decisions and determinations regarding courses of action (outputs), for major sections (divisions, groups), of his organization.

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these, however, attempts to classify the competencies and tasks by the area of responsibility and level of difficulty.

The members of the Task Forces on Accreditation and Certification did classify each competency by area of responsibility. For the first time, as a result of this procedure, a profile can be drawn for each area of responsibility at each level of difficulty. Profiles for "aides" are not presented at this time. To further clarify the profiles, a list of competencies can be found in Appendix page 35

The task force tabulations showed that in the area of media management, primary competencies for the specialist level should be in the functions of organization management, personnel management, and in utilization-dissemination; and secondary competencies in the functions of research & theory, design, production, evaluation & selection, support & supply, and utilization. This is visualized in Figure 3.

In the area of media management at the technician level, primary competencies should be in the functions of organization management, and support & supply. Secondary competencies are in the functions of personnel management, utilization/dissemination, evaluation & selection research & theory, and utilization. (See Figure 4.)

In the area of media product development, primary competencies for the specialist level should be in design and production; and secondary competencies should be in the areas of research & theory, utilization/dissemination, and personnel management. (See Figure 5.)

For the area of media product development at the technician level, the pri-

COMPETENCIES OF SPECIALISTS IN MEDIA MANAGEMENT

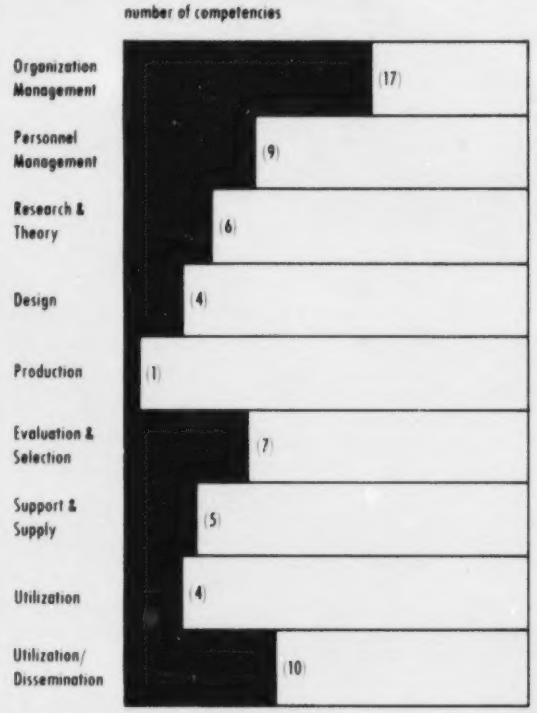


FIGURE 3

COMPETENCIES OF TECHNICIANS IN MEDIA MANAGEMENT

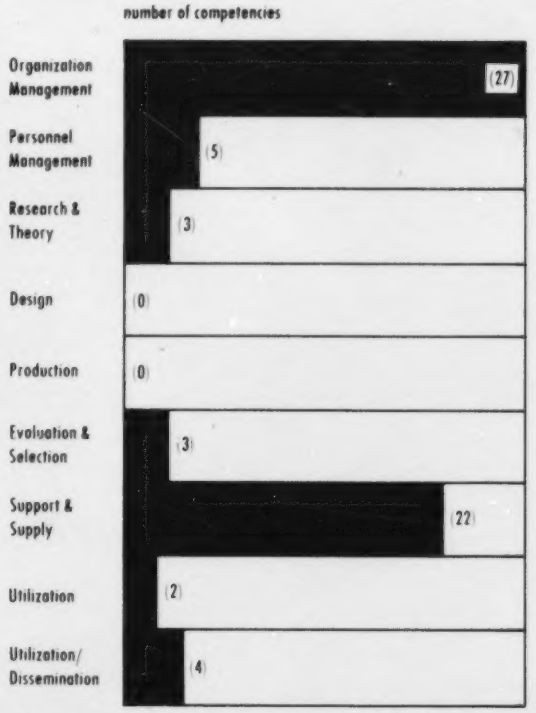


FIGURE 4

COMPETENCIES OF SPECIALISTS IN MEDIA PRODUCT DEVELOPMENT

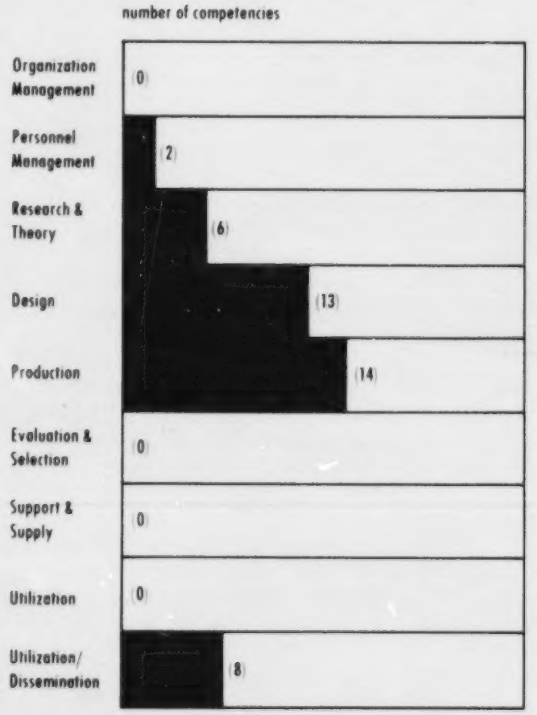


FIGURE 5

COMPETENCIES OF TECHNICIANS IN MEDIA PRODUCT DEVELOPMENT

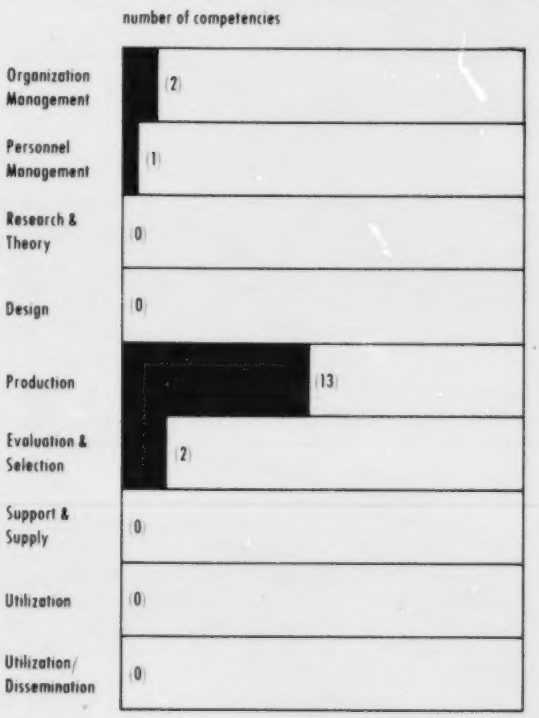


FIGURE 6

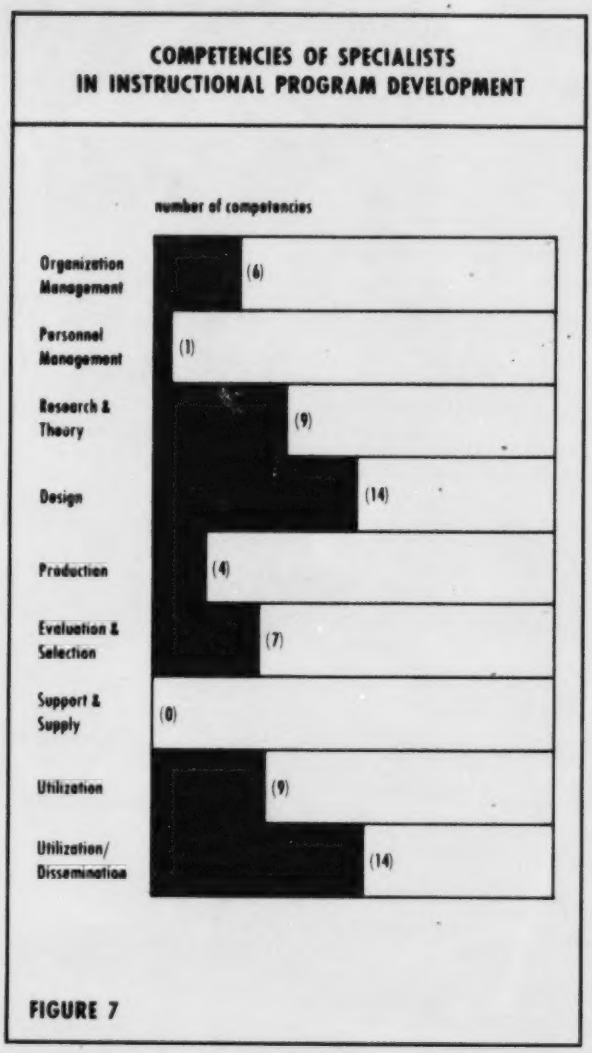


FIGURE 7

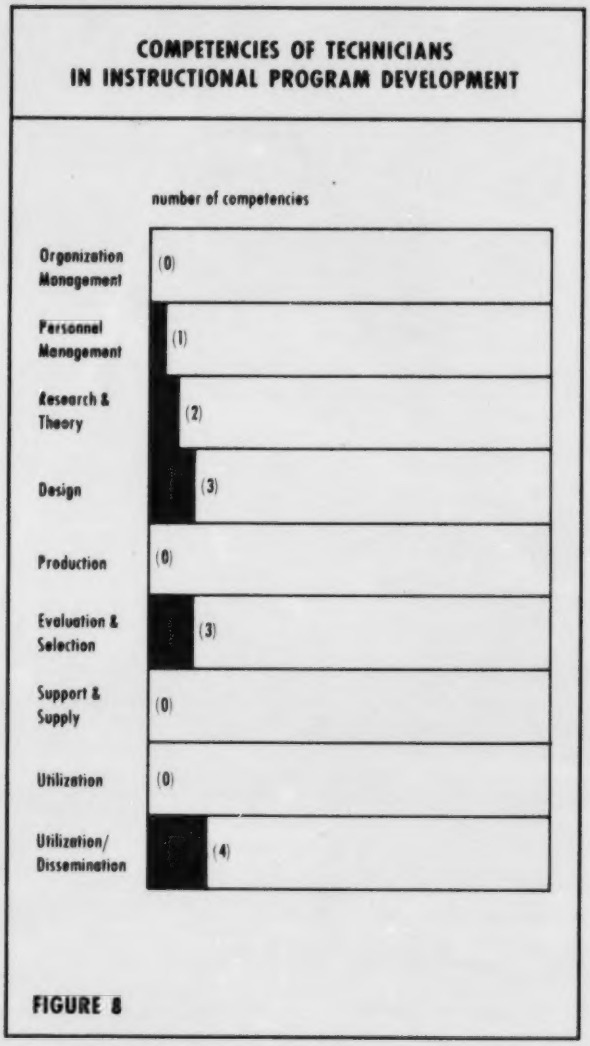


FIGURE 8

mary competencies are in the function of production, and the secondary competencies are in evaluation & selection and organization management. (See Figure 6.)

In the area of instructional program development, primary competencies at the specialist level should be in the areas of design, utilization/dissemination, research & theory, and utilization; with secondary competencies in the areas of evaluation & selection, organization management, and production. (See Figure 7.)

In the area of instructional program development at the technician level, the data showed only a few scattered competencies across many of the functions. It is, therefore, questionable if technicians can be in the area of instructional program development. (See Figure 8.)

The frame of reference developed above can be summarized as follows:

1. The field of instructional technology can be defined as, "(1) the organization and (2) the application of (3) resources—men, materials, ideas, procedures—in a systematic manner in order to solve instructional problems." (Hyer, 1971, p 44.)
2. Workers in the field of educational communications and technology assume responsibilities in three major areas, namely media management, media product development, and instructional program development.
3. Workers in the field of educational communications and technology can be classified as aides, technicians, or specialists, depending upon the level of complexity of the tasks which they perform.
4. Identifiable competencies and tasks can be clustered according to the nine functions of the D.I.T. model and by their complexity as judged by the Scale of Worker Instructions.

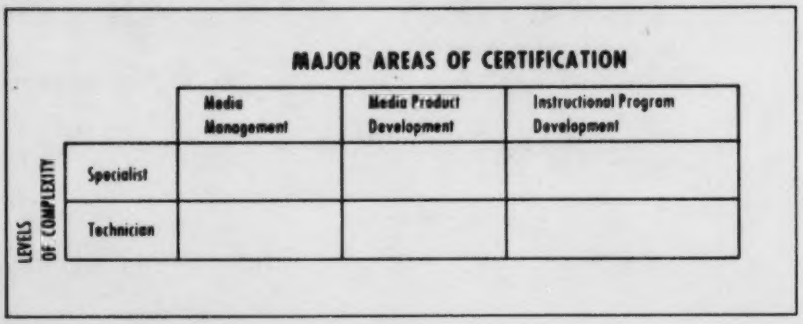
Based on the definition of the field presented above, based on the concept of three major areas of responsibility, and based on the clustering of tasks and competencies associated with the nine functions of the D.I.T. model, the Task Forces developed guidelines for a competency-based certification program and developed guidelines for the accreditation of programs for the preparation of educational communications and technology personnel. These guidelines are presented on the following pages.

Reference

Hyer, Anna L., *et al.* Final Report. *Jobs in instructional media study.* (USOE Project No. 8-0688. Grant No. OEG-0-8-080688-4494(085)) Washington, D.C.; Division of Educational Technology, National Education Association, 1971.

William C. Prigge *is dean, Instructional Improvement & Delivery, Madison College, Harrisonburg, Va.*

A COMPETENCY AND TASK LIST FOR SPECIALISTS AND TECHNICIANS IN MEDIA MANAGEMENT, MEDIA PRODUCT DEVELOPMENT, AND INSTRUCTIONAL PROGRAM DEVELOPMENT



The three major areas of responsibility of personnel in educational communications and technology are:

- media management
- media product development
- instructional program development

Within each area of responsibility there are two levels of complexity—technician and specialist—and certificates may be issued on each level in each area.

The figure illustrates the relationship between the major areas of responsibility and the two levels of complexity. This interrelationship indicates six areas in which certification may be developed. Within each major area of responsibility, and on each level of complexity, there are nine functions:

1. organization management
2. personnel management
3. research & theory
4. design
5. production
6. evaluation & selection
7. support & supply
8. utilization
9. utilization/dissemination

Within each of these nine functions, competencies/tasks exist on two levels—technician and specialist. For a list of these competencies/tasks and their levels of complexity see Appendix page 36

Media Management—Technician

A candidate seeking certification on the *technician* level in *media management* should present the following:

A. Competency: page 62
B. Degree: Associate Degree.
C. Experience: Three semester hours of supervised practicum, or internship, or field experience, or six months of work experience in the field.

Media Management—Specialist

A candidate seeking certification on the *specialist* level in *media management* should present the following:

A. Competency: page 36
B. Degree: Baccalaureate, and certification as a teacher.
C. Experience: Two years of experience as an educator.

Media Product Development—Technician

A candidate seeking certification on the *technician* level in *media product development* should present the following:

A. Competency: page 70
B. Degree: Associate Degree
C. Experience: Three semester hours of supervised practicum, or internship, or field experience, or six months of work experience in the field.

Media Product Development—Specialist

A candidate seeking certification on the *specialist* level in *media product development* should present the following:

A. Competency: page 45
B. Degree: Master's, and certification as a teacher.
C. Experience: Two years of experience in media product management.

Instructional Program Development—Technician

No certificate currently available for the technician level in this area.

Instructional Program Development—Specialist

A candidate seeking certification on the *specialist* level in *instructional program development* should present the following:

A. Competency: page 51
B. Degree: Doctorate, and certification as a teacher.
C. Experience: Three years classroom teaching experience; two years experience in instructional program development.

COMPETENCIES FOR SPECIALISTS IN MEDIA MANAGEMENT

ORGANIZATION MANAGEMENT FUNCTION.

TO SET GOALS/POLICY OF TRAINING CENTER

7 Designs organizational rationale to improve organization
7 Writes supporting paper to describe organizational rationale
6 Serves on committee to improve organization
6 Conducts staff meetings to work on long-range goals
6 Designs long-range plans to anticipate future growth
5 Designs conference to inform management of changes
5 Conducts briefing to inform management of changes
6 Develops conceptual model to design basic instructor course
7 Develops conceptual model to communicate complex concepts
6 Works with staff on projects to crossfertilize work

TO ORGANIZE AND REORGANIZE ORGANIZATION STRUCTURE TO MEET GOALS

7 Reads organization charter to identify organization goals
7 Translates goals to identify broad objectives
6 Speaks to colleagues to evaluate broad objectives
7 Writes paper to identify new broad objectives
6 Translates objectives to formulate organization functions
6 Confers with colleagues to evaluate appropriateness of functions
5 Analyzes relations between functions to develop functional matrix
6 Confers with colleagues to evaluate inclusiveness of matrix
6 Writes paper to revise functional matrix
6 Translates functional matrix to identify needed structures
6 Analyzes current structures to compare with needed structures
6 Analyzes current structures to determine weaknesses
7 Formulates organizational strategies to overcome weaknesses
6 Translates strategies to define new structures/operations
6 Analyzes new structures/operations to determine if they facilitate functions
6 Translates new structures/operation to formulate new structure matrix
6 Analyzes budget to determine structure constraints
6 Analyzes facilities to determine structure constraints
6 Analyzes staff interests to determine structure constraints
6 Rewrites matrix to include constraints
6 Compares structure & function matrices to evaluate structure matrix
5 Confers with colleagues to evaluate structure matrix
6 Writes paper to revise structure matrix
6 Reads matrix to define relations between dimensions
5 Analyzes relations and functions to define duties of personnel
6 Analyzes relations and functions to define interaction of personnel
6 Analyzes relations and functions to define lines of communication
6 Writes paper to explain new structure
5 Confers with colleagues to evaluate new structure
5 Listens to feedback to revise structure
5 Rewrites paper to revise structure
5 Selects personnel to fill key positions in structure

TO PLAN IMC OPERATIONS FOR COMING YEAR

Analyzes service requests to identify service needs
Calls departments to clarify service needs
Writes memo to departments to clarify service needs
Analyzes service needs to propose new service operation
Discusses with departments to propose new service operation

TO COORDINATE FACILITIES PLANNING

Counts number of staff members to ascertain facilities needs
Analyzes number and type activities to ascertain facilities needs
Reads floor plan to examine current facilities
Reads budget to discover fiscal resources
5 Examines work of organization to identify how facilities can help
5 Examines staff communication/interaction to identify how facilities can help
6 Synthesizes factors to develop facilities use plan
6 Negotiates with planners to obtain needed space on campus
6 Analyzes on-campus space obtained to ascertain need for additional space
5 Speaks to realtors to seek additional space off campus
6 Examines facilities/money ratio to select best facilities
6 Analyzes on-/off-campus space to ascertain need for additional space
6 Translates need for additional space to decide to build own facilities
5 Writes notice to publicize decision to build
5 Listens to architects who call to evaluate architects' ideas
5 Selects three architects to discuss facilities in depth
5 Speaks to architects in person to explain facilities needs
5 Listens to architects to evaluate proposed designs
6 Selects best general plan to hire architect
5 Explains work of organization to give architect design specifications
5 Explains how facilities aid work to give architect design specifications
5 Explains communication/interaction needs to give architect design specifications
5 Explains special needs of staff to give architect design specifications
5 Explains financial constraints to give architect design specifications
5 Persuades architect to meet staff to ensure staff input
5 Reads architect's plans to evaluate proposed facility design
5 Compares plans and needs to evaluate proposed facility design
5 Discusses plans with architect to suggest revisions in plans
5 Reads revised plans to re-evaluate proposed design
5 Compares revised plans and needs to re-evaluate proposed design
6 Reads final plans to approve proposed facility design
5 Reads architect's budget to ascertain proposed cost
6 Negotiates with architect to obtain lower cost
6 Negotiates with chancellor to obtain approval for facilities
5 Analyzes organization activities to ascertain equipment needs
5 Listens to staff to ascertain equipment needs
Reads current equipment inventory to identify equipment on hand
5 Compares equipment on hand and needs to identify equipment to be bought
5 Reads equipment order to approve for purchase

TO PLAN PROGRAMS/PROJECTS

5 Reads project reports to identify current work
5 Discusses projects/money with staff to identify future priorities
5 Speaks to staff to identify project interests

5 Speaks to colleagues to become involved in new ventures
6 Compares interests with organization philosophy to ensure compatibility
5 Reads newsletters, financial statements, to identify possible funding sources
6 Synthesizes discussion to propose department programs/projects
6 Writes paper to present department programs/projects
5 Talks with staff to evaluate programs/projects paper
6 Identifies constraints on programs to decide on program feasibility
6 Selects programs/projects for department to plan work for year

TO INITIATE AGENCY-FUNDED PROJECT

5 Reads assigned outline to clarify general idea of project
5 Asks questions to clarify general idea of project
Writes to agency to request guidelines for proposal
5 Reads previous proposals to obtain background information
5 Analyzes proposal guidelines to write text of proposal
6 Writes draft proposal to request agency funds
6 Rewrites proposal to align with organization interest
5 Analyzes staff needs to determine staff salary needs
Analyzes pay schedules to compute staff budget
5 Identifies appropriate staff to staff proposed program
Assesses equipment needs to compute equipment budget
Assesses materials needs to compute materials budget
Operates adding machine to compute total budget
Submits proposal to contracts office to acquire overhead figures
Writes up budget to support proposal
Circulates proposal to acquire appropriate signatures
Submits proposal to administration to approve for submission
6 Discusses with agency personnel to negotiate details of changes
5 Writes brochure to describe proposed program

TO FORMULATE POLICY FOR PROCEDURE & EQUIPMENT CHANGES IN CENTER

6 Analyzes budget commitment to determine cost constraints
6 Analyzes program commitment to determine program constraints
6 Analyzes usage projects to determine AV service needs
6 Analyzes past performance to determine revisions needed
6 Weighs all constraints to formulate plan
6 Recommends procedure changes to meet new policy
6 Recommends equipment changes to meet new policy

TO MONITOR AND CHANGE OPERATION OF CENTER

5 Discusses with course writers to increase course illustrations
5 Reads work plans to inform of work in progress
6 Identifies areas of work to anticipate developments
7 Conceptualizes plans to anticipate developments
6 Researches electronic illustrating to coordinate production unit
6 Designs long-range plans to coordinate production unit
6 Proposes information gathering to provide models for management
5 Discusses with technical experts to design new organizational model
6 Designs new organizational model to improve organization
6 Persuades management to hire additional personnel
Makes field trips to observe new hardware systems
5 Evaluates new equipment to assess compatibility
6 Persuades management to purchase new hardware
6 Evaluates organizational structure to determine need for new model

TO IMPROVE COMMUNICATIONS IN CENTER

5 Designs format to standardize publications
5 Proposes new documentation to improve research library
5 Develops new procedures to route information

TO ADMINISTER TRAINING CENTER

5 Assesses expenditures to write financial plan
5 Justifies expenditures to acquire funds for operation
5 Assesses cost benefits of training to inform management
5 Writes memos to management to acquire funds for operation
5 Negotiates with management to acquire funds for operation
5 Negotiates with management to institute open purchase account
5 Listens to staff discuss problems to resolve organizational problems
5 Asks questions of staff to resolve organizational problems
5 Makes decision on action to resolve organizational problems
5 Assesses draft training materials to make production decision
Routes incoming correspondence to assign for action
Reviews purchase orders to approve for purchase
Reviews bills to certify for payment
6 Conducts staff meetings to transmit information to staff

TO ADMINISTER/DIRECT PROJECT

7 Conceptualizes idea for project to meet program goals
5 Rereads contract to define desired outcomes
5 Analyzes goals of project to define needed activities/products
5 Speaks to technical workers to ascertain amount of time needed
5 Speaks to technical workers to ascertain jobs to be done
5 Speaks to technical workers to ascertain workers needed
5 Assesses cost restraints to determine limits of project
6 Writes tentative work plan to design project
6 Assigns staff to project to meet goals
5 Analyzes relations of activities to develop PERT schedule
5 Analyzes time for each activity to develop PERT schedule
5 Analyzes project limits to develop PERT schedule
5 Assigns completion dates to design project deadlines
Writes chart to formalize PERT schedule
5 Speaks to technical workers to explain PERT chart
Speaks to technical workers to inform of deadlines
5 Speaks to technical workers to review progress periodically
5 Observes staff work/products to evaluate work performed
5 Listens to outside input to improve product
5 Reviews work in progress to keep self informed
5 Discusses with staff to solve problems re product
5 Compares product/activities with goals to evaluate project performance
6 Analyzes problems in project to plan changes in project direction
6 Makes decision to terminate project to minimize wasted effort
5 Reviews project progress to present report to management/customer
5 Translates technical language to describe project to management/customer
5 Speaks to management and customer to present project progress
5 Writes report on project to present progress to management/customer
5 Compares product/activity with goals to assure quality of work
5 Compares product/activity with goals to suggest improvements
5 Writes final report on project to disseminate findings
5 Edits report on project to disseminate findings

TO ADMINISTER TRAINING COURSE

Writes announcements to publicize course
Schedules classrooms to reserve for course
Identifies teaching personnel to assign to course
Discusses with teaching personnel to clarify teaching assignments
5 Evaluates teaching to assess work of teaching personnel
Discusses with teaching personnel to evaluate success of course

TO DEVELOP MODEL FOR ECONOMIC ANALYSIS OF TRAINING

6 Researches approaches to identify most appropriate
6 Analyzes cost factors in training to develop list of training costs
6 Compares employee worth to cost to compute ratio of training costs
6 Designs system to determine value of training
6 Estimates changes in training to improve value of training

TO DESIGN FINANCIAL STRUCTURE

7 Reads history of organization to identify organization needs
7 Reads board requirements to identify organization needs
7 Reads bookkeeping department procedures to identify organization needs
6 Analyzes how to get financial information to identify organization needs
6 Analyzes decisions based on finances to identify organization needs
6 Analyzes needed controls on finances to identify organization needs
6 Synthesizes several need factors to define structure parameters
5 Discusses with auditor to identify fiscal regulations
5 Discusses with auditor to identify feasible structures
5 Discusses with auditor to identify acceptable structures
6 Analyzes acceptable structures to match with parameters
6 Compares structure/parameter matches to select financial structure

TO ESTIMATE MEDIA CENTER BUDGET

6 Analyzes past performance to determine revisions needed
5 Analyzes center inventories to list staff, equipment, and materials
5 Analyzes program projections to determine additions needed
5 Lists staff time and rates to determine staff budget
5 Lists equipment needs and costs to determine equipment budget
5 Lists materials needs and costs to determine materials budget
5 Totals costs to determine total budget
Gives instructions to secretary to have budget typed
Checks typed budget to ensure correct

TO PREPARE ANNUAL BUDGET

5 Reads state legal requirements to identify budgeting calendar
5 Writes memo to subordinates to require budget submissions
5 Analyzes budget submissions to identify operational requirements
5 Analyzes budget submissions to identify new programs
5 Compares past and present budgets to approve/disapprove budget
5 Compares budget and past performance to approve/disapprove budget
5 Compares sub-budgets to develop budget draft
5 Discusses with advisory committee to evaluate program improvements
5 Incorporates improvements in budget to develop final budget
Sends budget to county superintendent to have budget evaluated
5 Discusses budget with supervisor to have budget evaluated

TO SUPERVISE COOPERATIVE PURCHASING

6 Meets with district purchasing agents to determine if changes in policy
Sends order forms to districts to initiate purchasing cycle
Receives forms from district to compile county totals
5 Supervises analysis of forms to compile county totals
5 Reads maintainence reports to select brands of AV equipment
5 Reads new product reports to select brands of AV equipment
5 Compares different brands to select brands of AV equipment
5 Writes bid forms for contractors to obtain bids on equipment
5 Supervises sending of bid forms to obtain bids on equipment
Compiles bids from contractors to obtain bids on equipment
Opens bids in public to obtain bids on equipment
6 Compares bids to select equipment/materials vendors
Lays out samples to select equipment/materials vendors
6 Compares samples to select equipment/materials vendors
6 Analyzes product/cost relationship to select equipment/materials vendors
6 Recommends to committee to select equipment/materials vendors
5 Writes report to board of education to indicate vendor selections
Reads notification from board to approve vendor selections
Supervises secretary to prepare purchase orders
Specifies delivery time/place to prepare purchase orders
Signs forms to prepare purchase orders
Calls warehouse to rent warehouse for storage
Calls personnel office to hire shipping personnel
5 Supervises personnel to receive equipment/materials
5 Supervises personnel to store equipment/materials
5 Supervises personnel to redistribute equipment/materials
5 Supervises secretary to bill districts
5 Supervises bookkeeper to credit district accounts

TO PURCHASE AV MATERIALS

5 Discusses with principals to determine needs
Checks budget to determine money available
Assesses requests for new equipment/materials to determine purchase priority
Writes letters to manufacturers to request catalogs
Analyzes purchase requests to determine which catalog to search
Searches catalogs to identify appropriate materials
5 Compares list prices to determine best price
Calls producer to ascertain correct title
Arranges materials requested to group order list
Lists materials/equipment costs to compile order list for purchase
Operates typewriter to type order list
Submits order list to management to get approval
Assigns purchase order number to assure payment
Informs secretary to order materials for purchase
Fills out order form to order materials
Mails order form to manufacturer to place materials order
Calls manufacturer to assure rush order
Calls unit ordering materials to inform of manufacturer delay
Files purchase orders to keep track of those not received
Writes letters to manufacturers to remind of back orders
5 Makes decision to notify manufacturer to cancel late orders
5 Writes letter to manufacturer to cancel late orders
Compares new materials with invoice to check that order complete
Writes letters to manufacturers to correct wrong orders

PERSONNEL MANAGEMENT FUNCTION.

TO STAFF PROJECTS

6 Analyzes goals of project to define activities to be done
5 Analyzes budget to determine resources available
5 Translates project activities to develop job descriptions
6 Estimates staff needs to fill described jobs
Calls placement agency to inform of staff needs
Calls colleagues to inform of staff needs
5 Reads resumes to select applicants for interview
5 Selects short list of applicants to do initial interviewing
Calls applicants to set time and place for interview
5 Describes project and company to initiate job interview
5 Questions applicant to ascertain qualifications
6 Evaluates applicants to make staff selection
Calls selected applicant to notify of selection
Writes form letter to inform applicants of rejection
Tells secretary to transmit letter to applicants

TO STAFF TRAINING CENTER

7 Identifies area of work to define staff need
5 Analyzes budget to determine resources available
6 Writes memos to describe need for new position
5 Writes position description to get job classification
5 Writes description of position to advertise the vacancy
5 Reviews application forms to select applicants for interview
5 Interviews job applicants to select most suitable
5 Writes memos to advise hiring
5 Calls personnel department to speed application processing

TO CONDUCT TRAINING OF NEW STAFF ON GENERAL OFFICE PROCEDURES

Gathers office procedures information to determine goals of training
5 Writes paper to set up goals of training
5 Writes procedural manual to inform new employees
Reviews new employee papers to determine size/number of sessions
5 Draws rough sketches to design visuals for training
Calls production unit to arrange for production of visuals
Gathers employee information to distribute to new employees
Talks with new employees to inform of procedures
Distributes information to get information to employees
6 Evaluates session to determine success

TO SET UP ON-JOB TRAINING SEMINARS

5 Analyzes unit request to determine need for training
5 Writes position paper to set goals of training
Calls unit head to determine accuracy of goals
Calls unit head to ask recommendations on trainer
5 Evaluates recommendations to determine best trainer
Calls trainer chosen to notify of selection
5 Writes notice to publicize training
5 Evaluates applications to determine trainees
6 Attends training session to determine progress/relevance

TO IMPROVE COMMUNICATIONS BETWEEN TECHNICIANS AND ARTISTS

5 Chooses subject matter to encourage seminar discussion
Selects time and place to hold seminar
Writes notice to publicize seminar
5 Designs art kit to demonstrate technical details
5 Conducts seminar to encourage discussion

TO SUPERVISE PERSONNEL IN TRAINING CENTER

6 Discusses with new staff to develop performance criteria
5 Discusses with staff to evaluate work performed
5 Evaluates employee performance to assess employee progress
5 Evaluates employee performance to write evaluation report
5 Writes recommendations to suggest promotions and awards
5 Negotiates with personnel department to suggest promotions and awards
5 Discusses with staff to revise work plans
5 Assesses work to be performed to approve requests for leave
5 Conducts staff meetings to relay administration directives

TO SUPERVISE GRAPHICS UNIT

5 Reviews job applications to make recommendations
Makes recommendations to director to assist in hiring
5 Assesses staff work to write performance reports
Writes performance reports to inform supervisor
5 Discusses work load with staff to determine assignments
Assigns work to staff to meet goals of unit
Supervises staff to ensure work is completed
5 Discusses with staff to relay/interpret administration regulations

TO SUPERVISE STUDENT WORKERS

5 Discusses with staff to determine work assignments
5 Converses with students to assign work areas
Demonstrates equipment operation to train student workers
Computes time worked to determine payment
5 Evaluates student performance to write evaluation report

TO FIRE PERSONNEL

5 Reviews worker evaluation reports to determine acceptability of work
5 Discusses with supervisor to determine validity of reports
5 Discusses with worker to determine validity of reports
5 Discusses with peers to determine validity of reports
6 Makes decision to continue employment

RESEARCH-THEORY FUNCTION.

TO CONCEPTUALIZE THEORETICAL MODELS

Perceives problem in field to identify general research problem
7 Analyzes general problem to identify specific problem areas
6 Selects problem areas to limit specific problem
6 Analyzes problem areas to define specific problem
5 Combines specific problem factors to make concise problem definition
6 Translates problem statement to identify solution parameters
6 Reads problem/solution parameters to brainstorm solutions
6 Discusses problem with colleagues to brainstorm solutions
7 Combines ideas to generate new ideas
7 Translates ideas to other forms to generate new ideas
6 Seeks out research information to support/negate alternative ideas
7 Seeks out research information to generate new ideas
5 Compares solutions/information to evaluate proposed solutions
6 Compares solutions/information to generate new solutions
6 Synthesizes proposed solutions to converge on tentative model
5 Discusses model with colleagues to run reality test of model
5 Compares model with known data to run reality test of model
5 Analyzes reality test results to revise model
6 Writes paper to describe model

TO CONDUCT RESEARCH PROJECT

7 Identifies general problem to provide basis for research study
5 Reads journals to identify appropriate funding sources
5 Contacts colleagues to identify appropriate funding sources
6 Writes proposal to obtain funds for research study
7 Formulates specific hypothesis to conduct research study
6 Designs research methodology to test hypothesis
5 Reads proposal to identify project objectives
5 Analyzes objectives to define project activities
5 Analyzes activities to determine time for each activity
Combines times to develop project timeline
Develops budget to support research project
Transmits proposal to funding to obtain funds for research study
5 Negotiates with funding source to clarify details of proposal
5 Reads resumes of current staff to identify possible project staff
5 Speaks to current staff to identify possible project staff
6 Compares capabilities with needs to select project staff
5 Matches staff to activities to identify gaps in staff
5 Reads file of prospective staff to attempt to fill staff gaps
5 Speaks with prospective staff to evaluate qualifications
6 Compares applicants to select staff
5 Hires personnel to staff research project
5 Explains project to staff to train staff
5 Explains tasks to be done to train staff
Contacts individuals or schools to obtain subjects for study
6 Develops treatment to create experimental conditions
6 Develops instruments to measure effects of treatments
5 Administers treatment/instrument to collect data
Collates data to measure effects of treatments
5 Analyzes data to measure effects of treatments
5 Supervises personnel to ensure correct data collection
5 Supervises personnel to ensure correct data collation
5 Supervises personnel to ensure correct data analysis
6 Interprets data to evaluate validity of hypothesis
5 Listens to staff to solve project problems
6 States alternative solutions to solve project problems
6 Selects best solution to solve project problems
6 Writes progress reports to inform monitor of progress
5 Reads progress reports to evaluate project progress
6 Writes final report to disseminate research findings
Transmits report to funding source to disseminate research findings
6 Writes articles to disseminate research findings
6 Designs presentations to disseminate research findings
5 Reads papers at conventions to disseminate research findings

TO ANALYZE RESEARCH DATA

Speaks with researcher to understand data to be analyzed
5 Reads research proposal to understand type of data collected
5 Reads research proposal to understand study objectives
5 Translates objectives to define categories of responses
5 Reads data to determine if categories fit
5 Classifies each response to put responses into categories
Counts responses in each category to summarize data
6 Analyzes objectives/data type to select statistical formula
5 Reads formula to define computation sequence
5 Translates data into formula to perform statistical analysis
Operates calculator to perform statistical analysis
Reads statistical tables to perform statistical analysis
Compares data analysis with tables to determine significance of data
5 Examines objectives/data analysis to interpret meaning of data
6 Writes paper to explain outcome of study

TO IMPROVE STANDARDS OF RESEARCH PROJECTS

5 Defines basic/applied research to design guidelines for research
5 Designs standard test formats to design guidelines for research
5 Specifies resources available to design guidelines for research
6 Designs systematic procedures to design guidelines for research
6 Advises researchers to inform on psychological principles

TO PERFORM FEASIBILITY STUDY ON NEW EQUIPMENT

6 Analyzes idea for new equipment to develop method for feasibility study
6 Develops methodology to design feasibility study
6 Writes general specifications to design prototype equipment
5 Asks questions of engineers to determine technical specifications
6 Draws concrete plans to design prototype equipment
Calls production department to have prototype produced
5 Demonstrates operation of prototype to get feedback on performance
6 Revises design plans to improve prototype
Calls production department to have prototype revised
5 Assesses potential market to develop product cost data
5 Calculates materials/labor costs to develop product cost data
Divides cost by market to determine unit product cost
5 Identifies similar products to determine competition
5 Compares unit product cost to determine product competitiveness
6 Analyzes market/cost/competition to make recommendation
6 Writes report to disseminate results of study

TO CONDUCT SURVEY OF MEDIA USAGE

Copies from inventory to list equipment and materials
5 Analyzes survey objectives to compile usage questions
5 Analyzes survey objectives to compile response categories
Copies information from list to address questionnaire
Checks list to note returned questionnaires
Prepares tally sheet to summarize data
Tallies responses to summarize data
Writes summary of data to report to supervisor

DESIGN FUNCTION.

TO DESIGN EQUIPMENT SYSTEMS

5 Analyzes goals of organization to determine communication needs
5 Translates communication needs to identify technical systems
5 Writes general specifications to describe technical systems
5 Analyzes other equipment systems to determine external constraints
5 Analyzes physical facilities to determine physical constraints
5 Analyzes monetary considerations to determine financial constraints
5 Analyzes constraints to identify alternate systems
5 Analyzes constraints to identify alternate formats
Examines alternate systems to develop initial budget
5 Projects system growth to develop projected budget
Discusses with engineer to determine interface of systems
Reads technical fliers to identify components of system
Reads technical fliers to determine electrical interface
Reads technical fliers to determine physical interface
Selects components to meet interface requirements
Analyzes physical constraints to draw physical schematic
Analyzes electrical details to draw wiring diagrams
Writes detailed specifications to describe system components

TO DESIGN IMPROVED TRAINING EQUIPMENT

5 Writes criteria for needed device to ensure compatibility with system
5 Translates criteria for device to develop technical specifications
5 Compares devices with technical specifications to choose most appropriate
5 Designs prototype device to meet technical specifications
5 Assembles prototype to test design feasibility
5 Assigns prototype to field center to test design feasibility
Performs cost analysis to compute cost product data
5 Writes technical specifications for contract to initiate production of devices

TO DESIGN NEW FACILITIES

5 Analyzes work to be done to specify design needs
Analyzes equipment systems to determine space requirements
Examines current floor plans to determine space constraints
Analyzes budget to determine cost constraints
Analyzes physical construction to determine physical constraints
Analyzes equipment specifications to determine special requirements
Visits other facilities to get ideas for design
Reads brochures to identify best designs
Draws rough floor plan to communicate design needs
Discusses with architect to clarify design needs
Examines blueprints to suggest improvements

TO PLAN INSTRUCTIONAL SPACE

5 Discusses with teachers to identify instructional pattern
Analyzes instructional pattern to determine space needs
5 Draws floor plans to meet instructional pattern
5 Discusses with teachers to identify best floor plan
Submits chosen floor plan to get approval

PRODUCTION FUNCTION.

TO PRODUCE AV BULLETIN

5 Selects articles on AV to compile library of materials
6 Reads information in files to choose suitable subjects
6 Compiles information from files to write short articles
Arranges materials on sheet to design layout
Gives instructions to have copies made

EVALUATION-SELECTION FUNCTION.

TO DEVELOP A CLIMATE SUPPORTIVE OF EVALUATION

5 Reads key educational journals to assess attitudes to evaluation
5 Talks to educational leaders to assess attitudes to evaluation
5 Speaks to client group to identify special problems
5 Speaks to client group to develop rapport with group
5 Instructs client group to explain purposes of evaluation
5 Instructs client group to explain role of evaluator
5 Discusses with client group to answer questions re evaluation
5 Discusses with client group to emphasize non-threatening evaluation
5 Speaks with individual members to reduce specific inhibitions
5 Speaks with client group to invite participation in evaluation

TO PLAN AND FOCUS PROJECT EVALUATION

6 Reads project proposal to determine objectives to be evaluated
5 Analyzes project personnel/organization to determine decision makers
5 Speaks with decision makers to define decisions to be made
6 Translates project proposal/reports to specify project assumptions
6 Translates project proposal/reports to specify criteria for decision
5 Observes project in operation to learn project procedures
5 Speaks with project staff to learn project procedures
5 Translates objectives to specify student behaviors
5 Reads proposal to determine dates for evaluation reports
5 Reads proposal to determine audience for reports
5 Reads research literature to identify similar evaluation projects
6 Synthesizes needs/evaluation knowledge to develop evaluation plans
5 Speaks to content/technical experts to obtain review of evaluation plans
6 Translates evaluation plans to identify specific evaluation activities
5 Analyzes activities to determine staff/time/resources

TO DEVELOP EVALUATION MODELS AND TECHNIQUES

5 Discusses with client or associates to identify evaluation problem
6 Analyzes audience for information to determine characteristics
6 Analyzes evaluation problem to determine decisions to be made
6 Analyzes decisions to be made to determine information needs
Analyzes time limits to determine time constraints
5 Analyzes manageability of project to determine constraints
Analyzes study costs to determine money constraints
6 Translates information needs to identify values to be measured
6 Formulates value parameters to select behaviors reflecting values
6 Sets priorities among values to assign importance to behaviors
6 Selects appropriate indicators to measure values and behaviors
6 Translates indicators to develop criteria for evaluation instrument
6 Compares instruments/criteria to select evaluation instrument
6 Translates criteria to develop needed evaluation instrument
6 Designs data collection strategy to obtain measures of indicators
5 Sets up data processing procedure to analyze data
5 Sets up data translation procedure to obtain answers from data
5 Translates model decisions to put in mathematical format
5 Translates model decisions to put in graphical form
5 Compares model and objectives to test model effectiveness
5 Compares model and client needs to test if model communicates
Analyzes cost of model to determine if feasible
5 Runs sample data through model to field test for accuracy
5 Applies model to other projects to test whether generalizable

TO COLLECT, PROCESS, ANALYZE, AND INTERPRET EVALUATION DATA

5 Reads evaluation model/instrument to become aware of information needs
6 Reads evaluation model/instrument to identify sources for evaluation data
Calls school to arrange for evaluation data collection
6 Writes methodology to collect evaluation data
6 Formulates sampling procedure to collect evaluation data
6 Selects time schedule to collect evaluation data
5 Instructs personnel to collect evaluation data
5 Administers instrument to collect evaluation data
Records responses to instrument to collect evaluation data
6 Writes format to code evaluation data
Compares responses and answer key to score evaluation instruments
Calls computer center to arrange for data processing
5 Reads computer program library to select computer program
5 Supervises data processing to translate data to usable format
6 Reads evaluation model to select statistical procedure

5 Supervises data processing to analyze evaluation data
7 Translates results of analysis to interpret meaning of data
5 Compares data and objectives to provide answers to study questions
7 Translates answers to questions to indicate alternative action steps
7 Writes report to decision makers to transmit results/interpret action

TO PREVIEW AND SELECT INSTRUCTIONAL MATERIALS

5 Views material to do initial screening
Analyzes technical quality to reject poor quality items
5 Analyzes present curriculum needs to reject irrelevant items
5 Analyzes future curriculum needs to reject irrelevant items
5 Compares with teacher's needs to reject irrelevant items
5 Analyzes possible uses of material to select most appropriate
5 Combines factors to eliminate obvious rejects
6 Examines evaluation methods to select best evaluation method
Writes list of titles to prepare evaluation committee preview list
Writes list of titles to prepare specialist preview list
Writes annotation to describe material
Compiles annotation and comment sheet to collect evaluations
5 Explains material to evaluators to lead evaluation session
Requests evaluators to write comments to gather reactions
5 Asks questions to gather reactions
5 Leads discussion to gather reactions
5 Summarizes points made to lead evaluation session
5 Synthesizes comments to summarize evaluation
Tabulates recommendations to summarize evaluation
6 Evaluates comments/recommendations to make purchase decision
6 Analyzes reactions, needs to develop purchase priorities
Makes list of purchases to select materials for purchase
Sends list to director to purchase materials
Sends reactions to producers to inform producers of reactions
Calls teachers in one school building to evaluate materials
5 Shows materials to teachers to lead evaluation session
5 Asks questions re material utilization to gather reactions
5 Listens to teacher comments to gather reactions
5 Asks questions re teacher material needs to gather reactions
5 Writes suggestions to lead evaluation session
6 Synthesizes teacher reactions to make purchase decision
Sends suggestions to director to inform director of needs
Sends suggestions to producers to inform producers of needs
Calls students/teacher in a class to evaluate material
5 Shows material to students to field test material
5 Asks students questions to determine if objectives are met
5 Analyzes success in meeting objective to field test material
5 Asks students to evaluate material to field test material
6 Synthesizes student reactions to make purchase decisions
6 Examines success in meeting objective to make purchase decisions

TO EVALUATE INSTRUCTIONAL MATERIALS

6 Writes guidelines to select evaluation committee
Gives guidelines to advisory panel to obtain reaction/approval
5 Translates guidelines to select committee members
Checks calendar to set dates for evaluations
Calls auditorium coordinator to schedule evaluation sessions
5 Reads literature to select items for evaluation
5 Talks to salesmen to select items for evaluation
Reads memos from teachers to determine materials needs
5 Screens inputs to select items for evaluation
Organizes materials in groups to prepare for evaluation sessions
Writes list of items and dates to order items for preview
Gives instructions to staff to have preview materials ordered
Attends evaluation committee meeting to lead discussion
Asks questions to determine application/use
Collects committee evaluations to compile evaluation report
Attends staff evaluation session to lead discussion
Asks questions to determine application/use
Discusses with staff to clarify materials needs
Collects staff evaluation to compile evaluation report
Combines evaluations to develop evaluation rating
Sends evaluation rating to computer to have evaluation rating stored

TO EVALUATE FILM HOLDINGS

Requests secretary to have list of old films compiled
Requests content specialists to have them preview old films
Previews old films to evaluate physical condition
Makes decision to recommend destroying old film
Gives instructions to have old film destroyed

SUPPORT-SUPPLY FUNCTION.

TO IMPROVE EQUIPMENT ACQUISITION PROCEDURES

5 Writes technical specifications for equipment to evaluate proposals of contractor
5 Designs basic parameters of device to specify for production
5 Writes guidelines to specify minimum specifications for equipment
5 Performs cost analysis to recommend equipment
Discusses with management to encourage purchase of equipment
Compiles list of recommended equipment to inform field personnel

TO IMPROVE CATALOGING PROCEDURES

Discusses with salesmen to identify new cataloging techniques
Evaluates use of microfiche to design automated system
Evaluates use of microfilm to design automated system
5 Analyzes engineering demands to design automated system
Analyzes equipment standards handbook to recommend standard definitions
Lists recommended definitions to standardize definitions
Discusses with management to recommend standard definitions
Writes proposal to recommend verifying course card

TO CATALOG MATERIALS

Assigns sequential control number to catalog new materials
Compares title with catalog to determine if already catalogued
Assigns code from accession list to identify materials
Reads course materials to insure correct catalog notations
Reads new materials to classify materials
Assigns subject headings to classify materials
Previews film to write catalog description
Writes short description of film to catalog film
Reads review of materials to write catalog description
Determines standard notation to prepare to catalog
5 Checks classification list to cross-index materials
Reads review of materials to cross-index materials
Cross-indexes materials to facilitate location
5 Reads curriculum guides to classify materials in curriculum areas
5 Analyzes areas to identify curriculum topics
5 Groups curriculum topics to assign to grade levels
Adapts commercial catalog cards to catalog to local needs
Checks catalog notation to insure accuracy

Alphabetizes catalog cards to prepare for filing
Removes out of date cards to keep catalog files current
Lists new materials in catalog to update catalog
Operates typewriter to type catalog

TO IMPROVE DISTRIBUTION SYSTEM

Analyzes flow to identify major steps
Discusses with workers to identify major problems
Examines forms used to identify needed improvements
Designs new forms to improve record keeping
Plans new scheduling system to improve scheduling
Examines current routing lists to identify major problems
Plans new routing list to improve circulation
Analyzes circulation records to compute usage figures
Adds up times equipment used to compute usage figures
Analyzes usage figures to project equipment needs
Lists projected equipment needs to provide budget information

TO LOCATE CURRICULUM MATERIALS

Reads fliers and magazines to identify curriculum materials
Files references by subject area to compile materials file
Discusses with teacher to determine needs and objectives
Analyzes materials file to select references
Discusses with teacher to evaluate materials available
Discusses with teacher to explain reference sources
5 Advises teachers to inform of materials available
Reads curriculum materials to inform of materials available

UTILIZATION FUNCTION.

TO HELP STUDENT IDENTIFY LEARNING INTERESTS AND SELECT OBJECTIVES

Travels to school building to make self available to students
5 Listens to student to initiate conversation
5 Reads student records to identify relative education achievement
5 Probes student to identify interest and talent
5 Reads student records to identify social/ethnic difference
5 Reads student records to identify interest/attitude
5 Converses with student to identify interest and talent
5 Responds to student to encourage learning interests
5 Makes suggestions to student to identify interest and talent
5 Reads student records to identify past learning in area
5 Reads student records to identify learning difficulties in area
5 Discusses with student to review past learning and problems in area
5 Discusses with student to identify implication of past for present
5 Analyzes with student to narrow interest based on past/present
6 Analyzes with student to translate interest to broad objectives
6 Speaks with student to provide input on broad objectives
5 Analyzes with student to narrow broad objectives
6 Analyzes with student to translate broad interest to behavior objectives
5 Evaluates behavioral objectives with student to select objectives of immediate interest
5 Analyzes with student to develop learning sequence for objectives

TO HELP STUDENT SELECT LEARNING ACTIVITIES TO MEET OBJECTIVES

Administers tests to student to test student learning style
5 Reads test results to analyze student learning style
5 Instructs student to explain learning style
5 Discusses with student to explain idea of learning preference
5 Reads listing of learning activities to identify pre-packaged activities in system
5 Reads listing to identify learning activities related to objective
6 Compares student and activity objectives to select activities relevant to student
5 Discusses with student to explain different activities
5 Analyzes learning activities to identify human/media mix
5 Analyzes learning activities to identify individual/group mix
5 Compares activities/learning style to identify matches
5 Discusses with student to identify student learning preference
6 Combines activity/style/preference to make learning activity suggestions
5 Discusses with student to evaluate suggested activities
5 Listens to student feedback to identify problems with current learning activity
5 Combines different activities to generate new sets of activities
5 Discusses with student to evaluate combined activities
5 Listens to feedback from student to identify activity problems not solved
5 Discusses with student to identify student ideas for learning activities
5 Consults with student to help design individual learning activities

TO LECTURE/MAKE MEDIA PRESENTATIONS TO LARGE STUDENT GROUPS

5 Speaks to students to identify objectives of presentation
5 Speaks to students to explain importance of objectives
5 Discusses with students to identify group expectations for presentation
5 Speaks to students to present lecture information
5 Speaks to students to explain special media techniques
Operates media equipment to present information
5 Discusses with students to ask students questions
5 Analyzes questions/answers to evaluate student understanding
5 Analyzes questions/answers to evaluate presentation effectiveness
5 Observes student behavior to evaluate presentation effectiveness
6 Translates evaluation to change presentation
5 Listens to students to respond to student questions
5 Speaks to students to respond to student questions

TO MONITOR INDIVIDUALIZED INSTRUCTION/SELF-INSTRUCTIONAL MEDIA

Writes on student record to note student attendance
Writes on student record to note learning activity used
Checks materials for learning activity to check if ready for student
Calls center to obtain missing components
5 Observes students using materials to identify problems in handling materials
5 Discusses with student to explain handling of materials
5 Observes students using materials to identify problems in understanding
5 Observes students using materials to identify problems in performing activities
5 Discusses with student to ascertain if problem
5 Discusses with student to solve problem if simple
5 Discusses with student to recommend tutor to solve problem
Calls tutor to arrange for student session

UTILIZATION-DISSEMINATION FUNCTION.

TO MAINTAIN PROFESSIONAL STATUS/KEEP UP IN FIELD

6 Reads books/journal articles to learn issues/new knowledge
6 Joins professional associations to learn issues/new knowledge
6 Joins professional associations to develop professional contacts
6 Attends conventions to learn issues/new knowledge
5 Attends conventions to develop professional contacts
6 Writes articles/convention papers to disseminate new ideas
6 Writes articles/convention papers to gain recognition in field
5 Discusses with colleagues to understand issues in field
5 Discusses with colleagues to identify positions in field
Discusses with salesmen to become informed of new products
Circulates fliers to inform staff of new products
Maintains file of new equipment to keep informed on technology

TO DEVELOP DISSEMINATION STRATEGIES FOR TEACHER TRAINING PROJECT

5 Reads teacher training materials to identify target audience
5 Reads re target audience to identify key geographical areas
5 Reads re target audience to identify key institutions
5 Reads re target audience to identify key individuals
5 Analyzes dissemination materials to identify time institution needs
5 Analyzes dissemination materials to identify staff institution needs
5 Analyzes dissemination materials to identify facilities institution needs
5 Analyzes dissemination materials to identify materials institution needs
5 Analyzes dissemination materials to identify sequence/credit problems
6 Translates materials to list benefits to institution
5 Analyzes methods of involvement to involve institution in process
5 Analyzes methods of involvement to involve individuals in process
5 Examines institution influence patterns to identify dissemination flow
6 Synthesizes benefits/involvement/problems to develop dissemination plan
5 Discusses with colleagues to evaluate dissemination plan
5 Speaks with interested institution to field-test dissemination plan
5 Administers plan to field-test dissemination plan
5 Examines increased use of materials to evaluate dissemination plan
5 Speaks with other institutions to operationalize dissemination plan

TO EXPLAIN INDIVIDUALIZED INSTRUCTION PROJECT TO VISITORS

Speaks to visitor of superior to receive request for information
5 Talks with visitor to get acquainted/discover needs
Operates slide projector to make presentation on project
5 Discusses with visitor to explain project
5 Listens to visitor to identify questions re project
5 Discusses with visitor to answer questions re project
5 Instructs visitor to summarize project characteristics
Drives visitor to school to show project in operation
5 Instructs visitor to describe layout of classroom
5 Observes class with visitor to see project in action
5 Discusses with visitor to identify characteristic activities
5 Listens to visitor to identify questions re project
5 Discusses with visitor to indicate activities answering questions
Guides visitor tour to keep visitor out of teacher's way
5 Speaks with students/teachers to arrange for discussions with visitor
5 Listens to visitor/student/teacher discussion to provide help if needed
5 Discusses with visitor to summarize project
Collates project literature to give materials to visitor

TO PROVIDE INFORMATION ON AV CENTER

Defines media services available to prepare for brochure
Groups media services available to prepare for brochure
Estimates cost per item to prepare price list
Gives instructions to have brochure designed
Analyzes clients of center to define potential audience
Gives instructions to have copies of brochure mailed
5 Designs briefings to describe center operation
5 Writes briefing guide to provide briefing guidelines
Conducts briefings to describe center operation
Uses telephone to answer questions
Talks with visitors to describe services available
Talks with visitors to describe cataloging system
Talks with visitors to assist in locating materials
Operates AV production equipment to demonstrate operation

TO CONSULT ON MEDIA USE AND DESIGN

5 Advises outside personnel to improve use of media techniques
6 Examines building blueprints to suggest improvements
5 Advises outside personnel to improve training center design
5 Gives multi-media presentation to demonstrate use of media
5 Discusses with audience to clarify media principles used
5 Examines prototype materials to suggest improvements/evaluate
5 Serves on committees to disseminate information on media

TO PROMOTE INCREASED USE OF INSTRUCTIONAL TELEVISION (ITV)

5 Discusses with content specialists to identify appropriate parts of course
5 Designs model to clarify method/media decisions
5 Analyzes research on ITV to identify relevant factors
5 Analyzes cost effectiveness to demonstrate advantages of ITV
5 Discusses hardware systems to evaluate effectiveness
5 Observes hardware systems to evaluate effectiveness
6 Writes report to management to propose installation of ITV

TO REPORT TO MANAGEMENT

5 Analyzes work performed in unit to prepare work plans
5 Assigns work weeks to functions to prepare work plans
5 Estimates work to be performed to prepare work plans
5 Analyzes work plans to develop supporting budget
5 Develops staff time/output budget to support work plans
5 Writes progress reports to describe work performed

TO INFORM TEACHERS ON MEDIA

Discusses with teachers to inform on materials and equipment
Assesses teaching needs to suggest appropriate materials
Circulates information to inform on materials and equipment
Plans workshops to demonstrate AV services
Writes notice to announce demonstration
Operates AV equipment to demonstrate operation
Gives multi-media presentation to inform on AV services
5 Gives lectures to inform on library procedures
5 Gives lectures to inform on CAI programing

TO ADVISE PRODUCT PLANNERS ON EDUCATION MARKET

5 Compiles suggestions of educators to suggest new products
5 Evaluates new product specifications to align with educational expectations
5 Evaluates changes in products to determine effect on educational application
5 Discusses with product planners to inform of educational needs

TO FACILITATE FULLEST USE OF COMPANY PRODUCTS

Identifies company products to inform educators
6 Resolves usage problems to assist educators
6 Conducts workshops on products to assist educators
6 Identifies need to produce pamphlet on product
6 Writes pamphlet to describe application of product
Discusses with salesmen to inform on company products

TO TEACH BASIC AV COURSE

6 Shows filmstrip to teach behavioral objectives
5 Describes approach to teach behavioral objectives
6 Conducts simulated task analysis to provide active learning
5 Encourages writing of objectives to teach through active learning
5 Encourages writing of tests to teach through active learning
6 Describes media requirements to teach use of media in instruction
6 Describes group size contingencies to teach use of media in instruction
5 Advises students to assist in teaching with media
5 Advises students to assist in multi-media presentations
Operates equipment to demonstrate equipment operation
5 Teaches over CCTV to instruct in media production
5 Teaches over CCTV to instruct in graphics techniques
Operates TV camera to record session for ITV
5 Advises students to inform on graphics techniques
Operates movie camera to demonstrate to students
5 Advises students to assist in making film
5 Administers pre- and post-tests to reinforce teaching
Administers media skills test to evaluate student performance
5 Advises students to better master teacher relations
5 Advises students to inform on courses to take
5 Gives multi-media presentation to demonstrate use of media
Operates movie projector to show exemplary films
5 Discusses with students to clarify media principles

COMPETENCIES FOR SPECIALISTS IN MEDIA PRODUCT DEVELOPMENT

ORGANIZATION MANAGEMENT FUNCTION.

PERSONNEL MANAGEMENT FUNCTION.

TO IMPROVE COMMUNICATIONS BETWEEN TECHNICIANS AND ARTISTS

5 Chooses subject matter to encourage seminar discussion
Selects time and place to hold seminar
Writes notice to publicize seminar
5 Designs art kit to demonstrate technical details
5 Conducts seminar to encourage discussion

TO SUPERVISE GRAPHICS UNIT

5 Reviews job applications to make recommendations
Makes recommendations to director to assist in hiring
5 Assesses staff work to write performance reports
Writes performance reports to inform supervisor
5 Discusses work load with staff to determine assignments
Assigns work to staff to meet goals of unit
Supervises staff to ensure work is completed
5 Discusses with staff to relay/interpret administrative regulations

RESEARCH-THEORY FUNCTION.

TO CONCEPTUALIZE THEORETICAL MODELS

Perceives problem in field to identify general research problem
7 Analyzes general problem to identify specific problem areas
6 Selects problem areas to limit specific problem
6 Analyzes problem areas to define specific problem
5 Combines specific problem factors to make concise problem definition
6 Translates problem statement to identify solution parameters
6 Reads problem/solution parameters to brainstorm solutions
6 Discusses problem with colleagues to brainstorm solutions
7 Combines ideas to generate new ideas
7 Translates ideas to other forms to generate new ideas
6 Seeks out research information to support/negate alternative ideas
7 Seeks out research information to generate unthought-of ideas
5 Compares solutions/information to evaluate proposed solutions
6 Compares solutions/information to generate new solutions
6 Synthesizes proposed solutions to converge on tentative model
5 Discusses model with colleagues to run reality test of model
5 Compares model with known data to run reality test of model
5 Analyzes reality test results to revise model
6 Writes paper to describe model

TO CONDUCT RESEARCH PROJECT

7 Identifies general problem to provide basis for research study
5 Reads journals to identify appropriate funding sources
5 Contacts colleagues to identify appropriate funding sources

8 Writes proposal to obtain funds for research study
7 Formulates specific hypothesis to conduct research study
6 Designs research methodology to test hypothesis
5 Reads proposal to identify project objectives
5 Analyzes objectives to define project activities
5 Analyzes activities to determine time for each activity
Combines times to develop project timeline
Develops budget to support research project
Transmits proposal to funding to obtain funds for research study
5 Negotiates with funding source to clarify details of proposal
5 Reads resumés of current staff to identify possible project staff
5 Speaks to current staff to identify possible project staff
6 Compares capabilities with needs to select project staff
5 Matches staff to activities to identify gaps in staff
5 Reads file of prospective staff to attempt to fill staff gaps
5 Speaks with prospective staff to evaluate qualifications
6 Compares applicants to select staff
5 Hires personnel to staff research project
5 Explains project to staff to train staff
5 Explains tasks to be done to train staff
Contacts individuals or schools to obtain subjects for study
6 Develops treatment to create experimental conditions
6 Develops instruments to measure effects of treatments
5 Administers treatment/instrument to collect data
Collates data to measure effects of treatments
5 Analyzes data to measure effects of treatments
5 Supervises personnel to ensure correct data collection
5 Supervises personnel to ensure correct data collation
5 Supervises personnel to ensure correct data analysis
6 Interprets data to evaluate validity of hypothesis
5 Listens to staff to solve project problems
6 States alternative solutions to solve project problems
6 Selects best solution to solve project problems
6 Writes progress reports to inform monitor of progress
5 Reads progress reports to evaluate project progress
6 Writes final report to disseminate research findings
Transmits report to funding source to disseminate research findings
6 Writes articles to disseminate research findings
6 Designs presentations to disseminate research findings
5 Reads papers at conventions to disseminate research findings

TO ANALYZE RESEARCH DATA

Speaks with researcher to understand data to be analyzed
5 Reads research proposal to understand type of data collected
5 Reads research proposal to understand study objectives
5 Translates objectives to define categories of responses
5 Reads data to determine if categories fit
5 Classifies each response to put responses into categories
Counts responses in each category to summarize data
6 Analyzes objectives/data type to select statistical formula
5 Reads formula to define computation sequence
5 Translates data into formula to perform statistical analysis
Operates calculator to perform statistical analysis
Reads statistical tables to perform statistical analysis
Compares data analysis with tables to determine significance of data
5 Examines objectives/data analysis to interpret meaning of data
6 Writes paper to explain outcome of study

TO IMPROVE STANDARDS OF RESEARCH PROJECTS

5 Defines basic/applied research to design guidelines for research
5 Designs standard test formats to design guidelines for research
5 Specifies resources available to design guidelines for research
6 Designs systematic procedures to design guidelines for research
6 Advises researchers to inform on psychological principles

TO RESEARCH LEARNING STRATEGIES FOR CAI

6 Reads research literature to select relevant learning theories
6 Selects experimental CAI materials to run learning strategy experiment
5 Reads CAI materials to identify computer's part
5 Speaks to students to arrange for lesson simulation
Operates tape recorder to record lesson simulation
5 Asks questions from CAI lesson to try out lesson
Writes student responses to try out lesson
5 Analyzes mistakes to identify need for tutorial help
6 Formulates strategy to help student to correct mistakes
5 Talks with students to try out tutorial strategy
5 Analyzes students' responses to determine success of strategy
6 Formulates another strategy to correct mistakes
5 Talks with students to try out second strategy
5 Analyzes students' responses to determine success of strategy
5 Speaks to student to end lesson simulation
5 Listens to tapes of student sessions to summarize tutorial strategies
5 Analyzes tutorial strategies to identify common elements
5 Analyzes tutorial strategies to identify successful elements
6 Analyzes common/successful elements to derive general rules
6 Analyzes research literature/tutor behavior to derive specifications for CAI tutor system
5 Translates tutor system specifications to develop decision model
5 Translates decision model to develop programming flowchart
Translates programming flowchart to write computer program
Operates computer terminal to print out tutorial strategy
Reads print-out to check program
5 Speaks to students to arrange for lesson simulation
5 Observes students interaction with lesson to try out lesson
5 Observes effect of tutorial strategies to try out lesson
5 Analyzes student errors to evaluate lesson/tutor strategies

DESIGN FUNCTION.

TO DESIGN INSTRUCTIONAL MATERIALS FOR COURSE

6 Discusses with instructors to define training problem
6 Describes critical incidents to define training problem
5 Specifies tasks to identify terminal behavior
5 Defines objectives for course to identify terminal behavior
5 Writes overall design for course to organize content
5 Prescribes content area of course to organize content
Defines entry behavior of students to determine content
6 Writes technical draft to define training problem
6 Discusses with instructors to identify teaching strategy
6 Rewrites technical draft to improve training program
5 Designs pre- and post-tests to evaluate effectiveness of program
Evaluates extant materials to identify suitable content
5 Selects appropriate materials and media to organize course
Researches in literature to locate examples of simulation
5 Designs role plays to meet training need
5 Teaches course to evaluate effectiveness of materials

TO DESIGN PROGRAMED INSTRUCTION MATERIALS

5 Discusses with client to define problem area
5 Questions client to delimit problem area
5 Reads client's current materials to research problem area
5 Analyzes subject matter to identify segments for programing
5 Discusses with client to define target population
5 Analyzes potential audience to state assumptions about learners
5 Discusses with client to define general objectives
5 Analyzes subject matter to state broad objectives
5 Performs task analysis to organize content
5 Restates task analysis to design flow chart
5 Analyzes flow chart to write behavioral objectives

5 Discussos with client to refine behavioral objectives
5 Discusses with client to identify essential objectives
5 Listens in meeting to understand political aspects
5 Discusses with content experts to understand content
5 Discusses with client to reconcile conflicts in data
5 Discusses with client to revise behavioral objectives
5 Analyzes objectives/flow chart to write content outline
5 Writes brief draft of program to organize content
5 Analyzes content outline to select appropriate media
5 Analyzes content outline to select model/paradigm
5 Reviews content to sequence presentation
5 Analyzes content to determine units and frames
5 Translates objectives/content to write program frames
5 Revises draft of program to reduce step size
5 Analyzes objectives to write pre- and post-tests
5 Locates technical information to design visual chart
5 Analyzes technical information to design visual chart
Organizes pilot test to try out program
5 Evaluates pilot performance to evaluate program effectiveness
5 Revises program to improve quality

TO DESIGN MATERIALS FOR INSTRUCTOR TRAINING COURSE

5 Analyzes task list to group in logical clusters
5 Analyzes task groups to expand into objectives
5 Writes behavioral objectives to organize unit content
5 Analyzes behavioral objectives to select method of instruction
5 Designs content of unit to fulfill components of objectives
5 Writes instructor activities to clarify and expand course content
5 Decides on use of visuals to illustrate content
5 Writes summary of lesson to clarify lesson content
5 Teaches pilot lesson to time length
5 Writes supplementary handbook to assist in teaching course
5 Designs evaluation sheets to elicit student reaction to materials
5 Pilot tests to evaluate effectiveness of materials
5 Analyzes evaluation sheets to assess student reaction
5 Revises instructional materials to improve quality
Gives instructions to have materials distributed

TO COORDINATE DESIGN OF INSTRUCTOR TRAINING COURSE

5 Discusses with director to outline course design
Identifies planning task force to develop task list
5 Plans conferences to develop task list
5 Discusses with course writers to develop behavioral objectives
5 Writes operations plan to organize course development
5 Estimates time factors to organize course development
Selects site for pilot test to evaluate effectiveness of course
Discusses with training officer to arrange for pilot test
6 Critiques draft course materials to improve quality
Discusses with publications to organize mass production
5 Estimates number of copies needed to inform publications
5 Writes memos to field personnel to inform on progress of course
5 Conducts briefings to inform on progress of course
5 Writes report to management to inform on progress of course
5 Designs evaluation forms to evaluate effectiveness of course

TO WRITE UNIT FOR INSTRUCTOR COURSE

5 Analyzes learning modes to list characteristics
5 Assigns modes to objectives to provide model for instruction
5 Analyzes lesson plan construction to list characteristics
5 Designs sample lesson plans to provide model for instruction
5 Analyzes test construction to list characteristics
5 Designs sample tests to provide models for instruction

TO WRITE INSTRUCTORS GUIDE FOR INSTRUCTIONAL MATERIALS

5 Analyzes objectives to restate more fully
5 Assesses time spent in pilot to indicate time for items
Analyzes content and time to write schedule
5 Analyzes unprogramed segments to write lesson plans
5 Analyzes objectives to write pre-test
5 Analyzes objectives to write practice exercises
5 Analyzes objectives to write role plays

TO COORDINATE DESIGN OF AUTOMATED PRESENTATIONS

5 Identifies field personnel to select program developers
6 Evaluates written program to suggest improvements
6 Asks clarifying questions to suggest improvements
6 Analyzes step size to evaluate written program
6 Suggests revisions to improve written program
Discusses with producer to clarify production details
Analyzes script to assign pauses and tape stops
5 Examines draft visuals to assess correlation with script
5 Analyzes program to assess logical development
5 Chooses subjects to test out prototype program
Schedules testing session to test out prototype program
5 Evaluates results from test to test out prototype program

TO DEVELOP INSTRUCTIONAL PACKAGES FOR INDIVIDUALIZED INSTRUCTION (II)

Negotiates contract with customer to initiate project development
5 Instructs customer in II to define problems in process
5 Instructs customer in II to define changed concepts of instruction
5 Instructs customer in II to define effects on curriculum
5 Instructs customer in II to define new role of testing
5 Consults with client to determine client roles
5 Consults with client to determine company roles
5 Instructs customer in logistics to define work/money/time relationships
5 Questions client to define wants/needs and their relationship
5 Consults with client to feedback goals for project
5 Analyzes instructional setting to define learning environment
5 Analyzes project goals to define criterion performance
5 Translates criterion performance to define learning objectives
5 Analyzes current content to decide if teaches to objectives
5 Analyzes current content to determine procedures learner must do
5 Analyzes current content to define alternative procedures
5 Synthesizes objectives/content to define needed new content
5 Extrapolates from content/objectives to define teaching strategies
5 Translates teaching strategies to make media selections
Coordinates materials procurement to provide needed audio and visuals
5 Reads final script to edit content/sequence/ambiguity
5 Writes introduction to materials to describe materials utilization
5 Plays role of student to field test materials
Speaks to client to set up review panel
5 Shows materials to client to obtain review and comments
5 Translates suggestions to make revisions
Sends materials to client to fulfill contract

TO DESIGN MULTI-MEDIA PRESENTATIONS

6 Looks at organization projects to find production opportunity
5 Identifies projects related to idea to find production opportunity
5 Identifies amenable project directors to find production opportunity
5 Speaks to project directors to persuade to produce presentation
5 Discusses with project director to ascertain audience/objective
5 Calls associate to obtain design assistance
7 Examines meaning of idea to clarify presentation subject
7 Considers philosophy behind idea to clarify presentation subject
6 Considers ways of presenting to clarify presentation subject
6 Considers media involved to clarify presentation subject
6 Analyzes presentation subject to write general objectives
5 Breaks down general objectives to define behavioral objectives
6 Conceives ways of meeting objectives to develop treatment
6 Translates objectives/treatment to determine sequence
6 Translates objectives/treatment to determine content
6 Translates objectives/treatment to determine media
5 Synthesizes objectives/sequence/content/media to develop presentation outline
5 Synthesizes objectives/sequence/content/media to determine needed visuals
5 Synthesizes objectives/sequence/content/media to determine needed audio
5 Synthesizes objectives/sequence/content/media to determine odors, tastes, touches
5 Compiles needed sensory inputs to develop storyboard
5 Translates storyboard to develop presentation specifications
5 Transmits specifications to production function to have presentation produced

TO DESIGN EQUIPMENT SYSTEMS

5 Analyzes goals of organization to determine communication needs
5 Translates communication needs to identify technical systems
5 Writes general specifications to describe technical systems
5 Analyzes other equipment systems to determine external constraints
5 Analyzes physical facilities to determine physical constraints
5 Analyzes monetary considerations to determine financial constraints
5 Analyzes constraints to identify alternate systems
5 Analyzes constraints to identify alternate formats
Examines alternate systems to develop initial budget
5 Projects system growth to develop projected budget
Discusses with engineer to determine interface of systems
Reads technical flyers to identify components of system
Reads technical flyers to determine electrical interface
Reads technical flyers to determine physical interface
Selects components to meet interface requirements
Analyzes physical constraints to draw physical schematic
Analyzes electrical details to draw wiring diagrams
Writes detailed specifications to describe system components

TO DESIGN IMPROVED TRAINING EQUIPMENT

5 Writes criteria for needed device to ensure compatibility with system
5 Translates criteria for device to develop technical specifications
5 Compares devices with technical specifications to choose most appropriate
5 Designs prototype device to meet technical specifications
5 Assembles prototype to test design feasibility
5 Assigns prototype to field center to test design feasibility
Performs cost analysis to compute cost product data
5 Writes technical specifications for contract to initiate production of devices

TO DESIGN NEW FACILITIES

5 Analyzes work to be done to specify design needs
Analyzes equipment systems to determine space requirements
Examines current floor plans to determine space constraints
Analyzes budget to determine cost constraints
Analyzes physical construction to determine physical constraints
Analyzes equipment specifications to determine special requirements
Visits other facilities to get ideas for design
Reads literature to identify best designs
Draws rough floor plan to communicate design needs
Discusses with architect to clarify design needs
Examines blueprints to suggest improvements

TO PLAN INSTRUCTIONAL SPACE

5 Discusses with teachers to identify instructional pattern
Analyzes instructional pattern to determine space needs
5 Draws floor plans to meet instructional pattern
5 Discusses with teachers to identify best floor plan
Submits chosen floor plan to get approval

PRODUCTION FUNCTION.

TO SHOOT PHOTOGRAPHS ON LOCATION

Selects appropriate equipment to perform photographic assignment
Selects appropriate film to perform photographic assignment
Loads camera to prepare for photography
Loads equipment in car to deliver to location
Drives to location to deliver equipment
Discusses with client to clarify assignment
Sets up tripod and camera to prepare for shooting
Tests light level to set camera
Operates camera to photograph
Writes information on assignment to keep record

TO PRODUCE VISUALS FOR PRESENTATION

5 Reads script to develop overall view
5 Discusses with author to clarify details of presentation
5 Analyzes script to identify major ideas
5 Rough sketches images to convey message of script
5 Discusses with author to get approval of storyboard
5 Evaluates script to identify needed realia

TO PREPARE MATERIALS FOR TV

5 Edits film footage to produce final film
Operates movie projector to show film
Uses stopwatch to record running time of film
Splices film to produce continuous footage

TO PRODUCE/DIRECT MOTION PICTURE

5 Analyzes script to write shot breakdown
Organizes shot breakdown to provide shot sequences
5 Analyzes production details to write production plan
Analyzes production plan to develop production budget
Analyzes production plan to determine equipment needs
Analyzes production plan to determine talent/crew needs
5 Analyzes shot sequences to determine needed location
Searches in file to select suitable location
Calls appropriate agency to schedule location
Makes arrangements to transport crew/talent to location

5 Surveys location to revise shot breakdown
5 Gives instructions to sound crew to direct audio recording
5 Gives instructions to camera crew to direct shots to be taken
5 Gives instructions to talent to direct action for shots
5 Observes run-through to suggest improvements in film
5 Evaluates take to accept or reject film
Checks shot sequence to ensure all taken
5 Gives instructions to have artwork produced
5 Discusses with film editor to explain film concepts
5 Advises film editor to suggest improvements
5 Views sequences of film to approve rough cut
5 Discusses with specialists to have rough cut approved
5 Surveys market potential to decide on number of copies
Gives instructions to lab to have prints produced

TO COORDINATE PRODUCTION OF AUDIOTAPES

Discusses with writers to improve audio standards
Edits script to improve quality
Analyzes script to assign pauses
Operates tape recorder to produce scratch tape
Reads script aloud to produce scratch tape
Revises scratch tape to improve quality
Operates stopwatch and recorder to time scratch tape
Transmits script to narrator to have tape produced
Schedules preview session to play back audiotape
Makes arrangements to produce duplicates of tape

TO COORDINATE PRODUCTION OF SLIDE PRESENTATION

Interviews client to clarify presentation details
Writes standard production order to coordinate production
Writes time schedule to assign completion dates
Reads material provided to separate into major ideas
Rough sketches visuals to illustrate content outline
Writes summary of major ideas to organize content
Selects appropriate media to match media to content
Chooses colors and styles to give continuity to presentation
Writes instructions re color etc. to inform production units
Arranges storyboard cards by main ideas to assign frame numbers
Arranges storyboard cards by label to assign work to production units
Discusses storyboard cards to clarify production details
Searches stock files to choose existing slides
Removes poor quality slides to improve production quality
Operates camera to photograph complicated visuals
Arranges slides in sequence to organize in prescribed order
Operates slide projector to show raw presentation to client
Reads script and shows slides to show raw presentation to client
Discusses with client to determine revisions needed
Revises presentation to improve quality

TO COORDINATE PRODUCTION OF FILMSTRIP

5 Discusses with supervisors to determine curriculum needs
Visits locality to obtain background information
5 Writes learning objectives to coordinate filmstrip design
Analyzes learning objectives to write rough script
5 Discusses with photographer to determine pictures needed
Advises photographer to assist in location shooting
Analyzes slides to select suitable ones
5 Evaluates slides and tape to improve quality of material
6 Analyzes filmstrip to write teacher's manual
5 Analyzes catalogs and files to list related materials

TO COORDINATE PRODUCTION OF SOUND FILMSTRIP

Reads assigned script to assess work to be done
Edits portions of script to reduce length and improve quality
Revises script to follow design specifications
Sequences slides using slide viewer to match concepts in script
Rewrites portions of script to match words to existing visuals
Operates tape recorder to produce scratch tape
Reads script aloud to produce scratch tape
Listens to scratch tape to match audio and visuals
Draws rough sketches to design title frames
Discusses with art department to assign color and lettering
Times scratch tape with stopwatch to assess length of tape
Schedules meeting with director to show raw presentation
Demonstrates scratch tape and slides to obtain director's evaluation
Discusses with director to determine revisions needed
Revises scratch tape to improve quality
Schedules meeting with writer to show raw presentation
Demonstrates scratch tape and slides to obtain writer's evaluation
Discusses with writer to determine revisions needed
Revises scratch tape to improve quality

TO COORDINATE PRODUCTION OF SOUND FILMSTRIP

Schedules meeting with directors to discuss proposal
Recommends purchase of script to initiate production
Reads script to ensure correct grammar
Edits script to improve quality
Chooses subject matter consultant to ensure valid content
Asks subject matter consultant to have content validated
Checks pictures against script to insure all visuals present
5 Evaluates script to choose appropriate music and effects
Calls talent to request them to audition
Auditions talent to choose most suitable
Chooses appropriate narrator to obtain script narrator
Chooses appropriate music to obtain background music
Calls sound studio to schedule time for recording
Evaluates narrator's reading to suggest improvements
Gives signals to technical staff to produce audio recording
Mixes narration tape and sound to produce finished tape
Uses stylus to make acetate cut
Times recording with stop watch to determine length
Puts impulses on tape to produce pulsed tape
Listens to recording to insure complete and correct
Gives instructions to studio staff to have master made of tape
Assesses fee using union rates to pay narrator
Designs layout to design record sleeve

TO COORDINATE PRODUCTION OF MATERIALS FOR COURSE

Interviews client to clarify presentation details
Writes letters to past students to develop student profile
Tabulates responses from letters to develop student profile
Tabulates information to develop instructor profile
Interviews client to develop list of subjects taught
Questions client to list extant materials available
Reviews extant materials to select appropriate ones
5 Arranges materials to organize into logical order
5 Writes rough outline of content to develop course content
Sketches rough visuals to illustrate course outline
Interviews client to get approval of storyboard
Selects appropriate media to match media to content
Estimates cost for each segment to develop cost analysis
Adds estimated costs for segments to develop cost analysis
Interviews client to get approval of basic content
Writes time schedule to assign completion dates
Defines PERT chart to assign completion dates

Arranges storyboard cards to assign work to production units
Discusses storyboard cards to clarify production details
5 Incorporates design elements to write text
Evaluates materials produced to correct poor quality
Arranges materials in sequence to organize in prescribed order
Interviews client to get approval of production
Gives instructions to have multiple copies produced
5 Designs evaluation forms to pilot test instructional materials
Requests teacher to have pilot test conducted
Collects responses from pilot to assess reactions to materials
5 Revises instructional materials to improve quality

TO COORDINATE MASS PRODUCTION OF COURSE MATERIALS

Discusses with course developers to clarify details on production specifications
Requests course developers to obtain size and type of program
Evaluates list of contractors to select most appropriate
Calls contractor periodically to ensure product on time
Discusses with supervisor to define shipping arrangements
Observes packers to ensure product shipped safely
Calls producers to inform of mistakes in product
Calls producers to request replacement materials
Reads bill from producer to approve for payment

TO IMPROVE PRODUCTION STANDARDS

Collects information on visual materials to develop guidelines
Analyzes training materials to list weak areas in visuals
Writes visual standards to develop guidelines
5 Designs course to instruct in visual communications
Lists TV lighting requirements to write TV production manual
Describes TV camera techniques to write TV production manual
Describes placing of mikes to write TV production manual
5 Advises on filmmaking techniques to inform field personnel
Lists standards for audio to write audio production manual

TO WRITE COMPUTER PROGRAMS FOR CAI

Drives to schools to consult with teachers
5 Listens to teacher's description to understand concept
5 Asks questions to develop sequence for program
5 Suggests alternative approaches to define concept for program
Examines program outline to decide programming language
5 Designs flowchart to develop sequence for program
5 Analyzes steps in flowchart to translate into computer language
5 Tests program in computer to discover errors
5 Rewrites program to eliminate errors
Operates computer terminal to store program in memory

TO BUILD CCTV STUDIO

5 Analyzes program needs to write design specifications
5 Incorporates design specifications to draw floor plan
5 Incorporates design specifications to write equipment specifications
Calculates money available to compute budget
Observes equipment in operation to assess performance
5 Observes builders at work to ensure specifications are met
Builds soundproof ceiling to equip CCTV studio
5 Hooks up equipment to equip CCTV studio

EVALUATION-SELECTION FUNCTION.

SUPPORT-SUPPLY FUNCTION.

UTILIZATION FUNCTION.

UTILIZATION-DISSEMINATION FUNCTION.

TO MAINTAIN PROFESSIONAL STATUS/KEEP UP IN FIELD

6 Reads books/journal articles to learn issues/new knowledge
6 Joins professional associations to learn issues/new knowledge
6 Joins professional associations to develop professional contacts
6 Attends conventions to learn issues/new knowledge
5 Attends conventions to develop professional contacts
6 Writes articles/convention papers to disseminate new ideas
6 Writes articles/convention papers to gain recognition in field
5 Discusses with colleagues to understand issues in field
5 Discusses with colleagues to identify positions in field
Discusses with salesmen to become informed of new products
Circulates fliers to inform staff of new products
Maintains file of new equipment to keep informed on technology

TO CONSULT ON MEDIA USE AND DESIGN

5 Advises outside personnel to improve use of media techniques
6 Examines building blueprints to suggest improvements
5 Advises outside personnel to improve training center design
5 Gives multi-media presentation to demonstrate use of media
5 Discusses with audience to clarify media principles used
5 Examines prototype materials to suggest improvements/ evaluate
5 Serves on committees to disseminate information on media

TO REPORT TO MANAGEMENT

5 Analyzes work performed in unit to prepare work plans
5 Assigns work weeks to functions to prepare work plans
5 Estimates work to be performed to prepare work plans
5 Analyzes work plans to develop supporting budget
5 Develops staff time/output budget to support work plans
5 Writes progress reports to describe work performed

TO ADVISE PRODUCT PLANNERS ON EDUCATION MARKET

5 Compiles suggestions of educators to suggest new products
5 Evaluates new product specifications to align with educational expectations
5 Evaluates changes in products to determine effect on educational application
5 Discusses with product planners to inform of educational needs

TO FACILITATE FULLEST USE OF COMPANY PRODUCTS

Identifies company products to inform educators
5 Resolves usage problems to assist educators
5 Conducts workshops on products to assist educators
5 Identifies need to produce pamphlet on product
5 Writes pamphlet to describe application of product
Discusses with salesmen to inform on company products

TO ASSIST CONTENT SPECIALIST IN DEVELOPING MATERIALS

5 Discusses with content specialists to define training problem
5 Poses alternative responses to define training problem

5 Evaluates course outline to identify coherent segments
5 Discusses with content specialist to develop associated task list
Gives instructions to content specialists to describe use of learning modes
5 Drafts lesson plan to meet training problem
5 Discusses with content specialists to assist in TV program design
5 Evaluates draft programs to assess methodology used

TO TEACH BASIC AV COURSE

6 Shows filmstrip to teach behavioral objectives
5 Describes approach to teach behavioral objectives
6 Conducts simulated task analysis to provide active learning
5 Encourages writing of objectives and tests to teach through active learning
6 Describes media requirements to teach use of media in instruction
6 Describes group size contingencies to teach use of media in instruction
5 Advises students to assist in teaching with media
5 Advises students to assist in multi-media presentations
Operates equipment to demonstrate equipment operation
5 Teaches over CCTV to instruct in media production
5 Teaches over CCTV to instruct in graphics technique
Operates TV camera to record session for ITV
5 Advises students to inform on graphics techniques
Operates movie camera to demonstrate to students
5 Advises students to assist in making film
5 Administers pre- and post-tests to reinforce teaching
Administers media skills test to evaluate student performance
5 Advises students to better master teacher relations
5 Advises students to inform on courses to take
5 Gives multi-media presentation to demonstrate use of media
Operates movie projector to show exemplary movies
5 Discusses with students to clarify media principles

TO TEACH PHOTOGRAPHY COURSE

Writes lesson plans to organize course content
Writes statement of process to describe how to do photography
Operates copy camera to make slides of equipment
Writes objectives to produce mediated presentation
5 Selects slides to arrange in logical sequence
Operates tape recorder to produce tape for presentation
Operates camera to demonstrate exposure
Develops film to demonstrate film development
Develops negatives to demonstrate development
Exposes contact prints in frame to demonstrate exposure
Operates slide projector to show exemplary slides
Discusses with students to clarify elements of composition
Discusses with students to clarify lenses/setting decisions
Supervises use of camera to provide experience in photography
Discusses pictures to clarify composition/setting

COMPETENCIES FOR SPECIALISTS IN INSTRUCTIONAL PROGRAM DEVELOPMENT

ORGANIZATION MANAGEMENT FUNCTION.

TO ORGANIZE AND REORGANIZE ORGANIZATION STRUCTURE TO MEET GOALS

7 Reads organization charter to identify organization goals
7 Translates goals to identify broad objectives
6 Speaks to colleagues to evaluate broad objectives
7 Writes paper to identify new organization objectives
6 Translates objectives to formulate organization functions
6 Confers with colleagues to evaluate appropriateness of functions
5 Analyzes relations between functions to develop functional matrix
6 Confers with colleagues to evaluate inclusiveness of matrix
6 Writes paper to revise functional matrix
6 Translates functional matrix to identify needed structures
6 Analyzes current structures to compare with needed structures
6 Analyzes current structures to determine weaknesses
7 Formulates organizational strategies to overcome weaknesses
6 Translates strategies to define new structures/operations
6 Analyzes new structures/operations to determine if they facilitate functions
6 Translates new structures/operations to formulate new structure matrix
6 Analyzes budget to determine structure constraints
6 Analyzes facilities to determine structure constraints
5 Analyzes staff interests to determine structure constraints
6 Rewrites matrix to include constraints
6 Compares structure and function matrices to evaluate structure matrix
5 Confers with colleagues to evaluate structure matrix
6 Writes paper to revise structure matrix
6 Reads matrix to define relations between dimensions
5 Analyzes relations and functions to define duties of personnel
6 Analyzes relations and functions to define interaction of personnel
6 Analyzes relations and functions to define lines of communication
6 Writes paper to explain new structure
5 Confers with colleagues to evaluate new structure
5 Listens to feedback to revise structure
5 Rewrites paper to revise structure
5 Selects personnel to fill key positions in structure

TO PLAN PROGRAMS/PROJECTS

5 Reads project reports to identify current work
5 Discusses projects with staff to identify future priorities
5 Speaks to staff to identify project interests
5 Speaks to colleagues to become involved in new ventures
6 Compares interests with organization philosophy to ensure compatibility
5 Reads newsletters, financial statements to identify possible funding sources
5 Reads budget to identify internal support money
6 Synthesizes discussion to propose department programs/projects

6 Writes paper to present department programs/projects
5 Talks with staff to evaluate programs/projects paper
6 Identifies constraints on programs to decide on program feasibility
6 Selects programs/projects for department to plan work for year

TO INITIATE AGENCY-FUNDED PROJECT

5 Reads assigned outline to clarify general idea of project
5 Asks questions to clarify general idea of project
Writes to agency to request guidelines for proposal
5 Reads previous proposals to obtain background information
5 Analyzes proposal guidelines to write text of proposal
6 Writes draft proposal to request agency funds
6 Rewrites proposal to align with organization interest
5 Analyzes staff needs to determine staff salary needs
Analyzes pay schedules to compute staff budget
5 Identifies appropriate staff to staff proposed program
Assesses equipment needs to compute equipment budget
Assesses materials needs to compute materials budget
Operates adding machine to compute total budget
Submits proposal to contracts office to acquire overhead figures
Writes up budget to support proposal
Circulates proposal to acquire appropriate signatures
Submits proposal to administration to approve for submission
6 Discusses with agency personnel to negotiate details of changes
5 Writes brochure to describe proposed program

TO ADMINISTER TRAINING CENTER

5 Assesses expenditures to write financial plan
5 Justifies expenditures to acquire funds for operation
5 Assesses cost benefits of training to inform management
5 Writes memos to management to acquire funds for operation
5 Negotiates with management to acquire funds for operation
5 Negotiates with management to institute open purchase account
5 Listens to staff discuss problems to resolve organizational problems
5 Asks questions of staff to resolve organizational problems
5 Makes decision on action to resolve organizational problems
5 Assesses draft training materials to make production decision
Routes incoming correspondence to assign for action
Reviews purchase orders to approve for purchase
Reviews bills to certify for payment
6 Conducts staff meetings to transmit information to staff

TO ADMINISTER/DIRECT PROJECT

7 Conceptualizes idea for project to meet program goals
5 Rereads contract to define desired outcomes
5 Analyzes goals of project to define needed activities/products
5 Speaks to technical workers to ascertain amount of time needed
5 Speaks to technical workers to ascertain jobs to be done
5 Speaks to technical workers to ascertain workers needed
5 Assesses cost restraints to determine limits of project
6 Writes tentative work plan to design project
6 Assigns staff to project to meet goals
5 Analyzes relations of activities to develop PERT schedule
5 Analyzes time for each activity to develop PERT schedule
5 Analyzes project limits to develop PERT schedule
5 Assigns completion dates to design project deadlines
Writes chart to formalize PERT schedule
5 Speaks to technical workers to explain PERT chart
Speaks to technical workers to inform of deadlines
5 Speaks to technical workers to review progress periodically
5 Observes staff work/products to evaluate work performed
5 Listens to outside input to improve product
5 Reviews work in progress to keep self informed
5 Discusses with staff to solve problems re product
5 Compares product/activities with goals to evaluate project performance
6 Analyzes problems in project to plan changes in project direction
6 Makes decision to terminate project to minimize wasted effort
5 Reviews project progress to present report to management/customer
5 Translates technical language to describe project to management/customer
5 Speaks to management and customer to present project progress
5 Writes report to project to present progress to management/customer
5 Compares product/activities with goals to assure quality of work
5 Compares product/activities with goals to suggest improvements
5 Writes final report on project to disseminate findings
5 Edits report on project to disseminate findings

TO ADMINISTER TRAINING COURSE

Writes announcements to publicize course
Schedules classrooms to reserve for course
Identifies teaching personnel to assign to course
Discusses with teaching personnel to clarify teaching assignments
6 Evaluates teaching to assess work of teaching personnel
Discusses with teaching personnel to evaluate success of course

PERSONNEL MANAGEMENT FUNCTION.

TO STAFF PROJECTS

6 Analyzes goals of project to define activities to be done
5 Analyzes budget to determine resources available
5 Translates project activities to develop job descriptions
5 Estimates staff needs to fill described jobs
Calls placement agency to inform of staff needs
Calls colleagues to inform of staff needs
5 Reads résumés to select applicants for interview
5 Selects short list of applicants to do initial interviewing
Calls applicants to set time and place for interview
5 Describes project and company to initiate job interview
5 Questions applicant to ascertain qualifications
6 Evaluates applicants to make staff selection
Calls selected applicant to notify of selection
Writes form letter to inform applicants of rejection
Tells secretary to transmit letter to applicants

RESEARCH-THEORY FUNCTION.

TO CONCEPTUALIZE THEORETICAL MODELS

Perceives problem in field to identify general research problem
7 Analyzes general problem to identify specific problem areas
6 Selects problem areas to limit specific problem
6 Analyzes problem areas to define specific problem
5 Combines specific problem factors to make concise problem definition
6 Translates problem statement to identify solution parameters
6 Reads problem/solution parameters to brainstorm solutions
6 Discusses problem with colleagues to brainstorm solutions
7 Combines ideas to generate new ideas
7 Translates ideas to other forms to generate new ideas

6 Seeks out research information to support/negate alternative ideas
7 Seeks out research information to generate new ideas
5 Compares solutions/information to evaluate proposed solutions
6 Compares solutions/information to generate new solutions
6 Synthesizes proposed solutions to converge on tentative model
5 Discusses model with colleagues to run reality test of model
5 Compares model with known data to run reality test of model
5 Analyzes reality test results to revise model
6 Writes paper to describe model

TO CONDUCT RESEARCH PROJECT

7 Identifies general problem to provide basis for research study
5 Reads journals to identify appropriate funding sources
5 Contacts colleagues to identify appropriate funding sources
6 Writes proposal to obtain funds for research study
7 Formulates specific hypothesis to conduct research study
6 Designs research methodology to test hypothesis
5 Reads proposal to identify project objectives
5 Analyzes objectives to define project activities
5 Analyzes activities to determine time for each activity
Combines times to develop project timeline
Develops budget to support research project
Transmits proposal to funding to obtain funds for research study
5 Negotiates with funding source to clarify details of proposal
5 Reads résumés of current staff to identify possible project staff
5 Speaks to current staff to identify possible project staff
6 Compares capabilities with needs to select project staff
5 Matches staff to activities to identify gaps in staff
5 Reads file of prospective staff to attempt to fill staff gaps
5 Speaks with prospective staff to evaluate qualifications
6 Compares applicants to select staff
5 Hires personnel to staff research project
5 Explains project to staff to train staff
5 Explains tasks to be done to train staff
Contacts individuals or schools to obtain subjects for study
6 Develops treatment to create experimental conditions
6 Develops instruments to measure effects of treatments
5 Administers treatment/instrument to collect data
Collates data to measure effects of treatments
5 Analyzes data to measure effects of treatments
5 Supervises personnel to ensure correct data collection
5 Supervises personnel to ensure correct data collation
5 Supervises personnel to ensure correct data analysis
6 Interprets data to evaluate validity of hypothesis
5 Listens to staff to solve project problems
6 States alternative solutions to solve project problems
6 Selects best solution to solve project problems
6 Writes progress reports to inform monitor of progress
5 Reads progress reports to evaluate project progress
6 Writes final report to disseminate research findings
Transmits report to funding source to disseminate research findings
6 Writes articles to disseminate research findings
6 Designs presentations to disseminate research findings
5 Reads papers at conventions to disseminate research findings

TO ANALYZE RESEARCH DATA

Speaks with researcher to understand data to be analyzed
5 Reads research proposal to understand type of data collected
5 Reads research proposal to understand study objectives
5 Translates objectives to define categories of responses
5 Reads data to determine if categories fit
5 Classifies each response to put responses into categories
Counts responses in each category to summarize data
6 Analyzes objectives/data type to select statistical formula
5 Reads formula to define computation sequence
5 Translates data into formula to perform statistical analysis
Operates calculator to perform statistical analysis
Reads statistical tables to perform statistical analysis
Compares data analysis with tables to determine significance of data
5 Examines objectives/data analysis to interpret meaning of data
6 Writes paper to explain outcome of study

TO IMPROVE STANDARDS OF RESEARCH PROJECTS

5 Defines basic/applied research to design guidelines for research
5 Designs standard test formats to design guidelines for research
5 Specifies resources available to design guidelines for research
6 Designs systematic procedures to design guidelines for research
6 Advises researchers to inform on psychological principles

TO RESEARCH LEARNING STRATEGIES FOR CAI

6 Reads research literature to select relevant learning theories
6 Selects experimental CAI materials to run learning strategy experiment
5 Reads CAI materials to identify computer's part
5 Speaks to students to arrange for lesson simulation
Operates tape recorder to record lesson simulation
5 Asks questions from CAI lesson to try out lesson
Writes student responses to try out lesson
Analyzes mistakes to identify need for tutorial help
6 Formulates strategy to help student to correct mistakes
5 Talks with student to try out tutorial strategy
5 Analyzes student responses to determine success of strategy
6 Formulates another strategy to correct mistakes
5 Talks with students to try out second strategy
5 Analyzes students responses to determine success of strategy
5 Speaks to student to end lesson simulation
5 Listens to tapes of student sessions to summarize tutorial strategies
5 Analyzes tutorial strategies to identify common elements
5 Analyzes tutorial strategies to identify successful elements
6 Analyzes common/successful elements to derive general rules
6 Analyzes research literature/tutor behavior to derive specifications for CAI tutor system
5 Translates tutor system specifications to develop decision model
5 Translates decision model to develop programming flowchart
Translates programming flowchart to write computer program
Operates computer terminal to print out tutorial strategy
Reads print-out to check program
5 Speaks to students to arrange for lesson simulation
5 Observes students' interaction with lesson to try out lesson
5 Observes effect of tutorial strategies to try out lesson
5 Analyzes student errors to evaluate lesson/tutor strategies

TO PERFORM RESEARCH ON EFFECTIVENESS OF ITV

6 Analyzes current instructional pattern to identify ways of improvement
6 Lists new instructional patterns to identify ways of improvement
5 Selects ITV to improve learning process
5 Lists characteristics of ITV to identify parameters
5 Writes research plan to test effectiveness of ITV
6 Defines objectives to design research project
5 Discusses with content specialist to adapt course to TV script
5 Analyzes existing lesson to set objectives
5 Analyzes existing test to design post-test
5 Analyzes script to design visuals for TV
Discusses with artist to clarify visuals needed
Rehearses presentation to direct VTR production

Directs talent and crew to direct VTR production
Selects experimental group to measure effects of treatment
Selects control group to measure effects of treatment
Teaches conventional lesson to measure effects of treatment
5 Analyzes test results to compute effectiveness of TV
Compares test group with control to analyze effects of treatment
Measures time taken to compute time saved
Measures costs of instruction to compute money saved
Computes money/time saved to determine cost effectiveness
6 Writes report to disseminate findings

TO CONDUCT RESEARCH ON EFFECTIVE TRAINING TECHNIQUES

7 Designs research methodology to organize procedures of project
5 Discusses with school district to implement experimental approach
6 Translates theoretical model to develop teacher behavior scale
5 Observes teacher behavior to code according to scale
5 Codes teacher behavior to categorize according to scale
5 Performs statistical analysis on data to quantify teacher behavior
5 Compares observed behavior to model to identify teacher behavior problems
6 Designs alternate training strategies to teach new teacher behaviors
5 Supervises training conferences to teach new teacher behaviors
5 Observes teacher behavior to determine training effectiveness
6 Analyzes theoretical model to determine appropriate student behavior
5 Observes student behavior to code according to scale
5 Codes student behavior to determine teaching effectiveness
6 Translates theoretical model to develop attitude scale
Asks teachers to fill out scale to gather data on attitude
5 Performs statistical analysis to measure teacher attitude
5 Performs statistical analysis to analyze data
5 Interprets analyzed data to identify most effective technique

TO PERFORM FEASIBILITY STUDY ON NEW EQUIPMENT

6 Analyzes idea for new equipment to develop method for feasibility study
6 Develops methodology to design feasibility study
6 Writes general specifications to design prototype equipment
5 Asks questions of engineers to determine technical specifications
6 Draws concrete plans to design prototype equipment
Calls production department to have prototype produced
5 Demonstrates operation of prototype to get feedback on performance
6 Revises design plans to improve prototype
Calls production department to have prototype revised
5 Assesses potential market to develop product cost data
5 Calculates materials/labor costs to develop product cost data
Divides cost by market to determine unit product cost
5 Identifies similar products to determine competition
5 Compares unit product cost to determine product competitiveness
6 Analyzes market/cost/competition to make recommendation
6 Writes report to disseminate results of study

TO CONDUCT SURVEY OF MEDIA USAGE

Copies from inventory to list equipment and materials
5 Analyzes survey objectives to compile usage questions
5 Analyzes survey objectives to compile response categories
Copies information from list to address questionnaire
Checks list to note returned questionnaires
Prepares tally sheet to summarize data
Tallies responses to summarize data
Writes summary of data to report to supervisor

DESIGN FUNCTION.

TO DESIGN INSTRUCTIONAL MATERIALS FOR COURSE

6 Discusses with instructors to define training problem
6 Describes critical incidents to define training problem
5 Specifies tasks to identify terminal behavior
5 Defines objectives for course to identify terminal behavior
5 Writes overall design for course to organize content
5 Prescribes content area of course to organize content
Defines entry behavior of students to determine content
6 Writes technical draft to define training problem
6 Discusses with instructors to identify teaching strategy
6 Rewrites technical draft to improve training program
5 Designs pre- and post-tests to evaluate effectiveness of program
Evaluates extant materials to identify suitable content
5 Selects appropriate materials and media to organize course
Researches in literature to locate examples of simulation
5 Designs role plays to meet training need
5 Teaches course to evaluate effectiveness of materials

TO DESIGN PROGRAMED INSTRUCTION MATERIALS

5 Discusses with client to define problem area
5 Questions client to delimit problem area
5 Reads client's current materials to research problem area
5 Analyzes subject matter to identify segments for programing
5 Discusses with client to define target population
5 Analyzes potential audience to state assumptions about learners
5 Discusses with client to define general objectives
5 Analyzes subject matter to state broad objectives
5 Performs task analysis to organize content
5 Restates task analysis to design flow chart
5 Analyzes flow chart to write behavioral objectives
5 Discusses with client to refine behavioral objectives
5 Discusses with client to identify essential objectives
5 Listens in meeting to understand political aspects
5 Discusses with content expert to understand content
5 Discusses with client to reconcile conflicts in data
5 Discusses with client to revise behavioral objectives
5 Analyzes objectives/flow chart to write content outline
5 Writes brief draft of program to organize content
5 Analyzes content outline to select appropriate media
5 Analyzes content outline to select model/paradigm
5 Reviews content to sequence presentation
5 Analyzes content to determine units and frames
5 Translates objectives/content to write program frames
5 Revises draft of program to reduce step size
5 Analyzes objectives to write pre- and post-tests
5 Locates technical information to design visual chart
5 Analyzes technical information to design visual chart
Organizes pilot test to try out program
5 Evaluates pilot performance to evaluate program effectiveness
5 Revises program to improve quality

TO DESIGN MATERIALS FOR INSTRUCTOR TRAINING COURSE

5 Analyzes task list to group in logical clusters
5 Analyzes task groups to expand into objectives
5 Writes behavioral objectives to organize unit content
5 Analyzes behavioral objectives to select method of instruction
5 Designs content of unit to fulfill components of objectives
5 Writes instructor activities to clarify and expand course content
5 Decides on use of visuals to illustrate content
5 Writes summary of lesson to clarify lesson content
5 Teaches pilot lesson to time length
5 Writes supplementary handbook to assist in teaching course
5 Designs evaluation sheets to elicit student reaction to materials
5 Pilot tests to evaluate effectiveness of materials
5 Analyzes evaluation sheets to assess student reaction
5 Revises instructional materials to improve quality
Gives instructions to have materials distributed

TO COORDINATE DESIGN OF INSTRUCTOR TRAINING COURSE

5 Discusses with director to outline course design
Identifies planning task force to develop task list
5 Plans conferences to develop task list
5 Discusses with course writers to develop behavioral objectives
5 Writes operations plan to organize course development
5 Estimates time factors to organize course development
Selects site for pilot test to evaluate effectiveness of course
Discusses with training officer to arrange for pilot test
6 Critiques draft course materials to improve quality
Discusses with publications to organize mass production
5 Estimates number of copies needed to inform publications
5 Writes memos to field personnel to inform on progress of course
5 Conducts briefings to inform on progress of course
5 Writes report to management to inform on progress of course
5 Designs evaluation forms to evaluate effectiveness of course

TO WRITE UNIT FOR INSTRUCTOR COURSE

5 Analyzes learning modes to list characteristics
5 Assigns modes to objectives to provide model for instruction
5 Analyzes lesson plan construction to list characteristics
5 Designs sample lesson plans to provide model for instruction
5 Analyzes test construction to list characteristics
5 Designs sample tests to provide models for instruction

TO WRITE INSTRUCTORS GUIDE FOR INSTRUCTIONAL MATERIALS

5 Analyzes objectives to restate more fully
5 Assesses time spent in pilot to indicate time for items
Analyzes content and time to write schedule
5 Analyzes unprogramed segments to write lesson plans
5 Analyzes objectives to write pre-test
5 Analyzes objectives to write practice exercises
5 Analyzes objectives to write role plays

TO COORDINATE DESIGN OF AUTOMATED PRESENTATIONS

5 Identifies field personnel to select program developers
6 Evaluates written program to suggest improvements
6 Asks clarifying questions to suggest improvements
6 Analyzes step size to evaluate written program
6 Suggests revisions to improve written program
Discusses with producer to clarify production details
Analyzes script to assign pauses and tape stops
5 Examines draft visuals to assess correlation with script
5 Analyzes program to assess logical development
5 Chooses subjects to test out prototype program
Schedules testing session to test out prototype program
5 Evaluates results from test to test out prototype program

TO DEVELOP INSTRUCTIONAL PACKAGES FOR INDIVIDUALIZED INSTRUCTION (II)

Negotiates contract with customer to initiate project development
5 Instructs customer in II to define problems in process
5 Instructs customer in II to define changed concepts of instruction
5 Instructs customer in II to define effects on curriculum
5 Instructs customer in II to define new role of testing
5 Consults with client to determine client roles
5 Consults with client to determine company roles
5 Instructs customer in logistics to define work/money/time relationships
5 Questions client to define wants/needs and their relationships
5 Consults with client to feedback goals for project
5 Analyzes instructional setting to define learning environment
5 Analyzes project goals to define criterion performance
5 Translates criterion performance to define learning objectives
5 Analyzes current content to decide if teaches to objectives
5 Analyzes current content to determine procedures learner must do
5 Analyzes current content to define alternative procedures
5 Synthesizes objectives/content to define needed new content
5 Extrapolates from content/objectives to define teaching strategies
5 Translates teaching strategies to make media selections
Coordinates materials procurement to provide needed audio and visuals
5 Reads final script to edit content/sequence/ambiguity
5 Writes introduction to materials to describe materials utilization
5 Plays role of student to field-test materials
Speaks to client to set up review panel
5 Shows materials to client to obtain review and comments
5 Translates suggestions to make revisions
Sends materials to client to fulfill contract

TO DESIGN MULTI-MEDIA PRESENTATIONS

6 Looks at organization projects to find production opportunity
5 Identifies projects related to idea to find production opportunity
5 Identifies amenable project directors to find production opportunity
5 Speaks to project directors to persuade to produce presentation
5 Discusses with project director to ascertain audience/objective
5 Calls associate to obtain design assistance
7 Examines meaning of idea to clarify presentation subject
7 Considers philosophy behind idea to clarify presentation subject
6 Considers ways of presenting to clarify presentation subject
6 Considers media involved to clarify presentation subject
6 Analyzes presentation subject to write general objectives
5 Breaks down general objectives to define behavioral objectives
6 Conceives ways of meeting objectives to develop treatment
6 Translates objectives/treatment to determine sequence
6 Translates objectives/treatment to determine content
6 Translates objectives/treatment to determine media
5 Synthesizes objectives/sequence/content/media to develop presentation outline

5 Synthesizes objectives/sequence/content/media to determine needed visuals
5 Synthesizes objectives/sequence/content/media to determine needed audio
5 Synthesizes objectives/sequence/content/media to determine odors, tastes, touches
5 Compiles needed sensory inputs to develop storyboard
5 Translates storyboard to develop presentation specifications
5 Transmits specifications to production function to have presentation produced

TO IMPROVE INSTRUCTION THROUGH SYSTEMS APPROACH

6 Listens and watches professor to analyze teaching technique
6 Observes student behavior to analyze teaching technique
Operates tape recorder to record class procedures
Uses tape recorder and typewriter to make transcript of proceedings
6 Analyzes lecture to derive objectives for course
6 Discusses with professor to confirm validity of objectives
6 Analyzes derived objectives to define conditions for learning
5 Discusses with students to ascertain visuals needed
5 Rough sketches visuals to illustrate course content
5 Locates artifacts in museum to illustrate course content
5 Locates visuals in books to illustrate course content
Operates copy camera to make slides of visuals
5 Locates commercial materials to illustrate course content
Writes to producer to request materials for preview
Operates movie projector to preview film
6 Arranges materials in sequence to illustrate course content

TO DESIGN EQUIPMENT SYSTEMS

5 Analyzes goals of organization to determine communication needs
5 Translates communication needs to identify technical systems
5 Writes general specifications to describe technical systems
5 Analyzes other equipment systems to determine external constraints
5 Analyzes physical facilities to determine physical contraints
5 Analyzes monetary considerations to determine financial constraints
5 Analyzes constraints to identify alternate systems
5 Analyzes constraints to identify alternate formats
Examines alternate systems to develop initial budget
5 Projects system growth to develop projected budget
Discusses with engineer to determine interface of systems
Reads technical fliers to identify components of system
Reads technical fliers to determine electrical interface
Reads technical fliers to determine physical interface
Selects components to meet interface requirements
Analyzes physical constraints to draw physical schematic
Analyzes electrical details to draw wiring diagrams
Writes detailed specifications to describe system components

TO DESIGN IMPROVED TRAINING EQUIPMENT

5 Writes criteria for needed device to ensure compatibility with system
5 Translates criteria for device to develop technical specifications
5 Compares devices with technical specifications to choose most appropriate
5 Designs prototype device to meet technical specifications
5 Assembles prototype to test design feasibility
5 Assigns prototype to field center to test design feasibility
Performs cost analysis to compute cost product data
5 Writes technical specifications for contract to initiate production of devices

TO DESIGN NEW FACILITIES

5 Analyzes work to be done to specify design needs
Analyzes equipment systems to determine space requirements
Examines current floor plans to determine space constraints
Analyzes budget to determine cost constraints
Analyzes physical construction to determine physical constraints
Analyzes equipment specifications to determine special requirements
Visits other facilities to get ideas for design
Reads literature to identify best designs
Draws rough floor plan to communicate design needs
Discusses with architect to clarify design needs
Examines blueprints to suggest improvements

TO PLAN INSTRUCTIONAL SPACE

5 Discusses with teachers to identify instructional pattern
Analyzes instructional pattern to determine space needs
5 Draws floor plans to meet instructional pattern
5 Discusses with teachers to identify best floor plan
Submits chosen floor plan to get approval

PRODUCTION FUNCTION.

TO COORDINATE PRODUCTION OF MATERIALS FOR COURSE

Interviews client to clarify presentation details
Writes letters to past students to develop student profile
Tabulates responses from letters to develop student profile
Tabulates information to develop instructor profile
Interviews client to develop list of subjects taught
Questions client to list extant materials available
Reviews extant materials to select appropriate ones
5 Arranges materials to organize into logical order
5 Writes rough outline of content to develop course content
Sketches rough visuals to illustrate course outline
Interviews client to get approval of storyboard
Selects appropriate media to match media to content
Estimates cost for each segment to develop cost analysis
Adds estimated costs for segments to develop cost analysis
Interviews client to get approval of basic content
Writes time schedule to assign completion dates
Defines PERT chart to assign completion dates
Arranges storyboard cards to assign work to production units
Discusses storyboard cards to clarify production details
5 Incorporates design elements to write text
Evaluates materials produced to correct poor quality
Arranges materials in sequence to organize in prescribed order
Interviews client to get approval of production
Gives instructions to have multiple copies produced
5 Designs evaluation forms to pilot test instructional materials
Requests teacher to have pilot test conducted
Collects responses from pilot to assess reactions to materials
5 Revises instructional materials to improve quality

TO COORDINATE MASS PRODUCTION OF COURSE MATERIALS

Discusses with course developers to clarify details on product specifications
Requests course developers to obtain size and type of program
Evaluates list of contractors to select most appropriate
Calls contractor periodically to ensure product on time
Discusses with supervisor to define shipping arrangements
Observes packers to ensure product shipped safely
Calls producers to inform of mistakes in product
Calls producers to request replacement materials
Reads bill from producer to approve for payment

TO WRITE ACTIVITY FRAMES

Analyzes script to choose key concepts
Selects key words to present to students to define
Selects topics to present for review and discussion
Selects topics to present for enrichment activity
5 Incorporates design elements to write activity frames
Gives directions to art department to make slides into test print
Discusses with audio director to decide on music and sound effects

TO WRITE COMPUTER PROGRAMS FOR CAI

Drives to school to consult with teachers
5 Listens to teacher's description to understand concept
5 Asks questions to develop sequence for program
5 Suggests alternative approaches to define concept for program
Examines program outline to decide programing language
5 Designs flow chart to develop sequence for program
5 Analyzes steps in flow chart to translate into computer language
5 Tests program in computer to discover errors
5 Rewrites program to eliminate errors
Operates computer terminal to store program in memory

EVALUATION-SELECTION FUNCTION.

TO DEVELOP A CLIMATE SUPPORTIVE OF EVALUATION

5 Reads key educational journals to assess attitudes to evaluation
5 Talks to educational leaders to assess attitudes to evaluation
5 Speaks to client group to identify special problems
5 Speaks with client group to develop rapport with group
5 Instructs client group to explain purposes of evaluation
5 Instructs client group to explain role of evaluator
5 Discusses with client group to answer questions regarding evaluation
5 Discusses with client group to emphasize non-threatening evaluation
5 Speaks with individual members to reduce specific inhibitions
5 Speaks with client group to invite participation in evaluation

TO PLAN AND FOCUS PROJECT EVALUATION

6 Reads project proposal to determine objectives to be evaluated
5 Analyzes project personnel/organization to determine decision makers
5 Speaks with decision makers to define decisions to be made
6 Translates project proposal/reports to specify project assumptions
6 Translates project proposal/reports to specify criteria for decision
5 Observes project in operation to learn project procedures
5 Speaks with project staff to learn project procedures
5 Translates objectives to specify student behaviors
5 Reads proposal to determine dates for evaluation reports
5 Reads proposal to determine audience for reports
5 Reads research literature to identify similar evaluation projects
6 Synthesizes needs/evaluation knowledge to develop evaluation plans
5 Speaks to content/technical experts to obtain review of evaluation plans
6 Translates evaluation plans to identify specific evaluation activities
5 Analyzes activities to determine staff/time/resources

TO DEVELOP EVALUATION MODELS AND TECHNIQUES

5 Discusses with client or associates to identify evaluation problem
6 Analyzes audience for information to determine characteristics
6 Analyzes evaluation problem to determine decisions to be made
6 Analyzes decisions to be made to determine information needs
Analyzes time limits to determine time constraints
5 Analyzes manageability of project to determine constraints
Analyzes study costs to determine money constraints
6 Translates information needs to identify values to be measured
6 Formulates value parameters to select behaviors reflecting values
6 Sets priorities among values to assign importance to behaviors
6 Selects appropriate indicators to measure values and behaviors
6 Translates indicators to develop criteria for evaluation instrument
6 Compares instruments/criteria to select evaluation instrument
6 Translates criteria to develop needed evaluation instrument
6 Designs data collection strategy to obtain measures of indicators
5 Sets up data processing procedure to analyze data
5 Sets up data translation procedure to obtain answers from data
5 Translates model decisions to put in mathematical format
5 Translates model decisions to put in graphical format
5 Compares model and objectives to test model effectiveness
5 Compares model and client needs to test if model communicates
Analyzes cost of model to determine if feasible
5 Runs sample data through model to field test for accuracy
5 Applies model to other projects to test whether generalizable

TO COLLECT, PROCESS, ANALYZE, AND INTERPRET EVALUATION DATA

5 Reads evaluation model/instrument to become aware of information needs
6 Reads evaluation model/instrument to identify sources for evaluation data
Calls school to arrange for evaluation data collection
6 Writes methodology to collect evaluation data
6 Formulates sampling procedure to collect evaluation data
6 Selects time schedule to collect evaluation data
5 Instructs personnel to collect evaluation data
5 Administers instrument to collect evaluation data
Records responses to instrument to collect evaluation data
6 Writes format to code evaluation data
Compares responses and answer key to score evaluation instruments
Calls computer center to arrange for data processing
5 Reads computer program library to select computer program
5 Supervises data processing to translate data to usable format
6 Reads evaluation model to select statistical procedure
5 Supervises data processing to analyze evaluation data
7 Translates results of analysis to interpret meaning of data
5 Compares data and objectives to provide answers to study questions
7 Translates answers to questions to indicate alternative action steps
7 Writes report to decision makers to transmit results/interpret/action

TO PREVIEW AND SELECT INSTRUCTIONAL MATERIALS

5 Views material to do initial screening
Analyzes technical quality to reject poor quality items
5 Analyzes present curriculum needs to reject irrelevant items
5 Analyzes future curriculum needs to reject irrelevant items
5 Compares with teacher's needs to reject irrelevant items

5 Analyzes possible uses of material to select most appropriate
5 Combines factors to eliminate obvious rejects
6 Examines evaluation methods to select best evaluation method
Writes list of titles to prepare preview list
Writes annotation to describe material
Compiles annotation and comment sheet to collect evaluations
5 Explains material to evaluators to lead evaluator session
Requests evaluators to write comments to gather reactions
5 Asks questions to gather reactions
5 Leads discussion to gather reactions
5 Summarizes points made to lead evaluation session
5 Synthesizes comments to summarize evaluation
Tabulates recommendations to summarize evaluation
6 Evaluates comments/recommendations to make purchase decision
6 Analyzes reactions, needs to develop purchase priorities
Makes list of purchases to select materials for purchase
Sends list to director to purchase materials
Sends reactions to producers to inform producers of reactions
Calls teachers in one school building to evaluate materials
5 Shows materials to teachers to lead evaluation session
5 Asks questions regarding material utilization to gather reactions
5 Listens to teacher comments to gather reactions
5 Asks questions regarding teacher material needs to gather reactions
5 Writes suggestions to lead evaluation session
6 Synthesizes teacher reactions to make purchase decision
Sends suggestions to director to inform director of needs
Sends suggestions to producers to inform producers of needs
Calls students/teacher in a class to evaluate material
5 Shows material to students to field test material
5 Asks students questions to determine if objectives are met
5 Analyzes success in meeting objective to field test material
5 Asks students to evaluate material to field test material
6 Synthesizes student reactions to make purchase decisions
6 Examines success in meeting objective to make purchase decisions

TO EVALUATE INSTRUCTIONAL MATERIALS

6 Writes guidelines to select evaluation committee
Gives guidelines to advisory panel to obtain reaction/approval
5 Translates guidelines to select committee members
Checks calendar to set dates for evaluations
Calls auditorium coordinator to schedule evaluation sessions
5 Reads literature to select items for evaluation
5 Talks to salesmen to select items for evaluation
Reads memos from teachers to determine materials needs
5 Screens inputs to select items for evaluation
Organizes materials in groups to prepare for evaluation sessions
Writes list of items and dates to order items for preview
Gives instructions to staff to have preview materials ordered
Attends evaluation committee meeting to lead discussion
Asks questions to determine application/use
Collects committee evaluations to compile evaluation report
Attends staff evaluation session to lead discussion
Asks questions to determine application/use
Discusses with staff to clarify materials needs
Collects staff evaluation to compile evaluation report
Combines evaluations to develop evaluation rating
Sends evaluation rating to computer to have evaluation rating stored

TO PILOT TEST PROTOTYPE INSTRUCTIONAL MATERIALS

6 Reads materials objectives to identify learner behaviors
6 Translates learner behaviors to develop prototype test
6 Compares test with objectives to insure test validity
6 Discusses test with author to insure test validity
5 Administers materials/test to student to try out test
5 Questions student regarding material to provide comparison data
5 Compares test/verbal responses to check test validity
Calls school to arrange for test audience
Supervises secretary to have tests typed/duplicated
Takes materials/tests to school to conduct pilot test
Gives instructions to students to orient them to pilot test
Distributes materials to class to conduct pilot test
5 Observes students using materials to identify problems with materials
5 Observes reactions of students to assess non-verbal response
Listens to student questions to identify problems with materials
Distributes tests to class to conduct pilot test
5 Observes students taking tests to identify problems with test
5 Listens to student questions to identify problems with test
Compares tests with answer key to score tests
Compiles scores for each question to analyze data
5 Compares analyzed data/objectives to identify objectives not met
5 Performs item analysis of test to identify weak areas
6 Writes anecdotal data to interpret results of tests
Sends materials to designer to have materials revised

SUPPORT-SUPPLY FUNCTION.

UTILIZATION FUNCTION.

TO HELP STUDENT IDENTIFY LEARNING INTERESTS AND SELECT OBJECTIVES

Travels to school building to make self available to students
5 Listens to student to initiate conversation
5 Reads student records to identify relative educational achievement
5 Probes student to identify interest and talent
5 Reads student records to identify social/ethnic difference
5 Reads student records to identify interest/attitude
5 Converses with student to identify interest and talent
5 Responds to student to encourage learning interests
5 Makes suggestions to student to identify interest and talent
5 Reads student records to identify past learning in area
5 Reads student records to identify learning difficulties in area
5 Discusses with student to review past learning and problems in area
5 Discusses with student to identify implications of past for present
5 Analyzes with student to narrow interest based on past/present
6 Analyzes with student to translate interest to broad objectives
6 Speaks with student to provide input on broad objectives
5 Analyzes with student to narrow broad objectives
6 Analyzes with student to translate broad to behavioral objectives
5 Evaluates behavioral objectives with student to select objective of immediate interest
5 Analyzes with student to develop learning sequence for objective

TO HELP STUDENT SELECT LEARNING ACTIVITIES TO MEET OBJECTIVES

Administers tests to student to test student learning style
5 Reads test results to analyze student learning style
5 Instructs student to explain learning style
5 Discusses with student to explain idea of learning preference
5 Reads listing of learning activities to identify prepackaged activities in system
5 Reads listing to identify learning activities related to objectives
6 Compares student and activity objectives to select activities relevant to student
5 Discusses with student to explain different activities
5 Analyzes learning activities to identify human/media mix
5 Analyzes learning activities to identify individual/group mix
5 Compares activities/learning style to identify matches
5 Discusses with student to identify student learning preference
6 Combines activity/style/preference to make learning activity suggestions
5 Discusses with student to evaluate suggested activities
5 Listens to student feedback to identify problems with current learning activities
5 Combines different activities to generate new sets of activities
5 Discusses with student to evaluate combined activities
5 Listens to feedback from student to identify activity problems not solved
5 Discusses with student to identify student ideas for learning activities
5 Consults with student to help design individual learning activities

TO HELP STUDENT PREPARE TO USE LEARNING ACTIVITY

Discusses with student to arrange time for learning activity
Calls instructional materials center to schedule materials for learning activities
5 Discusses with student to explain logistic aspects of learning activities
5 Discusses with student to explain unique components of learning activities
5 Discusses with student to review objectives of learning activities
5 Discusses with student to encourage interest in learning activities
5 Discusses with student to explain assessment procedures
Administers pre-test to collect base-level data on objective
5 Listens to student to answer questions on use of learning activities

TO LECTURE/MAKE MEDIA PRESENTATIONS TO LARGE STUDENT GROUPS

5 Speaks to students to identify objectives of presentation
5 Speaks to students to explain importance of objectives
5 Discusses with students to identify group expectations for presentation
5 Speaks to students to present lecture information
5 Speaks to students to explain special media techniques
Operates media equipment to present information
5 Discusses with students to ask students questions
5 Analyzes question/answers to evaluate student understanding
5 Analyzes question/answers to evaluate presentation effectiveness
5 Observes student behavior to evaluate presentation effectiveness
6 Translates evaluation to change presentation
5 Listens to students to respond to student questions
5 Speaks to students to respond to student questions

TO MONITER INDIVIDUALIZED INSTRUCTION/SELF-INSTRUCTIONAL MEDIA

Writes on student record to note student attendance
Writes on student record to note learning activity used
Checks materials for learning activity to check if ready for student
Calls center to obtain missing components
5 Observes student using materials to identify problems in handling materials
5 Discusses with student to explain handling of materials
5 Observes students using materials to identify problems in understanding
5 Observes students using materials to identify problems in performance activities
5 Discusses with student to ascertain problem
5 Discusses with student to solve problem if simple
5 Discusses with student to recommend tutor to solve problem
Calls tutor to arrange for student session

TO ACT AS RESOURCE FOR INDIVIDUAL/GROUP DIRECTED LEARNING ACTIVITIES

Travels to school to be available to students
5 Writes capabilities/interests resumé to identify capability/interest to students
5 Waits in office to be available to students
5 Speaks to students performing learning activities to ascertain objectives and activities
5 Speaks to students performing learning activities to ascertain possible role for self
5 Listens to students to learn if they need/want help
5 Speaks to students to indicate acceptance of negative response
5 Listens to student questions to carry out positive response
5 Discusses with students to phrase questions in other ways
5 Asks students questions to probe problems/understandings
5 Instructs students to explain concept/information
5 Performs activity to demonstrate activity
5 Discusses with students to indicate further resources

TO FACILITATE GROUP LEARNING PROCESS

5 Instructs group to explain facilitator role
5 Observes group learning process to gather data for observations
6 Analyzes group process to evaluate resource utilization
6 Analyzes group process to evaluate interpersonal relations
6 Analyzes group process to evaluate supportiveness of members
6 Analyzes group process to evaluate problem solving process
6 Analyzes group process to evaluate success in working to goal
6 Speaks to group to make process intervention
6 Discusses with group to suggest analysis of process
6 Speaks to group to provide input where appropriate

TO TUTOR INDIVIDUAL STUDENTS WITH LEARNING DIFFICULTIES

5 Listens to student to hear student perception of learning problem
5 Questions student to identify what student does understand
5 Questions student to identify parameters of learning problem
5 Reads student records to identify similar past learning problems

5 Reads student records to identify past learning successes
5 Reads student records to identify learning style
5 Reads student records to identify affective factors
5 Discusses with student to identify current peer/family relations
6 Synthesizes factors to formulate tentative approach
5 Discusses with student to have student evaluate tutor approach
5 Speaks to student to prescribe remedial learning activities
5 Asks student questions to probe understandings/problems
5 Performs activity to demonstrate activity
5 Speaks to student to explain in new way
5 Listens to student responses/questions to evaluate student learning
5 Speaks to student to answer questions
6 Analyzes student feedback to revise tutoring approach

TO FOLLOW UP STUDENT WORK ON LEARNING ACTIVITY

5 Discusses with student to obtain impression of learning experience
Administers post-test to ascertain student learning
5 Compares pre-and post-tests to determine if student met objective
Writes post-test score to add to student record
5 Speaks to student to explain post-test
5 Speaks to student to identify objectives not met
5 Listens to student to get student view of test/objectives
5 Speaks to student to suggest recycle through process
5 Explains learning activity evaluation form to have student evaluate learning activity
Sends negative evaluations to materials evaluator to have learning activity revised/eliminated
Calls parent to arrange for meeting
5 Discusses with student/parent to explain student progress
5 Listens to parent to understand parent concerns
5 Discusses with parent/student to point out student concerns
5 Analyzes parent/student differences to resolve possible conflict
5 Discusses differences with parent/student to resolve possible conflict
6 Evaluates student/parent conference to write report
6 Writes report of student/parent conference to keep record of progress

UTILIZATION-DISSEMINATION FUNCTION.

TO MAINTAIN PROFESSIONAL STATUS/KEEP UP IN FIELD

6 Reads books/journal articles to learn issues/new knowledge
6 Joins professional associations to learn issues/new knowledge
6 Joins professional associations to develop professional contacts
6 Attends conventions to learn issues/new knowledge
5 Attends conventions to develop professional contacts
6 Writes articles/convention papers to disseminate new ideas
6 Writes articles/convention papers to gain recognition in field
5 Discusses with colleagues to understand issues in field
5 Discusses with colleagues to identify positions in field
Discusses with salesmen to become informed of new products
Circulates fliers to inform staff of new products
Maintains file of new equipment to keep informed on technology

TO DEVELOP DISSEMINATION STRATEGIES FOR TEACHER TRAINING PROJECT

5 Reads teacher training materials to identify target audience
5 Reads regarding target audience to identify key geographical areas
5 Reads regarding target audience to identify key institutions
5 Reads regarding target audience to identify key individuals
5 Analyzes dissemination materials to identify time institution needs
5 Analyzes dissemination materials to identify staff institution needs
5 Analyzes dissemination materials to identify facilities institution needs
5 Analyzes dissemination materials to identify materials institution needs
5 Analyzes dissemination materials to identify sequence/credit problems
6 Translates materials to list benefits to institution
5 Analyzes methods of involvement to involve institution in process
5 Analyzes methods of involvement to involve individuals in process
5 Examines institution influence patterns to identify dissemination flow
6 Synthesizes benefits/involvement/problems to develop dissemination plan
5 Discusses with colleagues to evaluate dissemination plan
5 Speaks with interested institution to field-test dissemination plan
5 Administers plan to field-test dissemination plan
5 Examines increased use of materials to evaluate dissemination plan
5 Speaks with other institutions to operationalize dissemination plan

TO EXPLAIN INDIVIDUALIZED INSTRUCTION PROJECT TO VISITORS

Speaks to visitor or supervisor to receive request for information
5 Talks with visitor to get acquainted/discover needs
Operates slide projector to make presentation on project
5 Discusses with visitor to explain project
5 Listens to visitor to identify questions regarding project
5 Discusses with visitor to answer questions regarding project
5 Instructs visitor to summarize project characteristics
Drives visitor to school to show project in operation
5 Instructs visitor to describe layout of classroom
5 Observes class with visitor to see project in action
5 Discusses with visitor to identify characteristic activities
5 Listens to visitor to identify questions regarding project
5 Discusses with visitor to indicate activities answering questions
Guides visitor tour to keep visitor out of teacher's way
5 Speaks with students/teachers to arrange for discussions with visitor
5 Listens to visitor/student/teacher discussion to provide help if needed
5 Discusses with visitor to summarize project
Collates project literature to give materials to visitor

TO CONSULT ON MEDIA USE AND DESIGN

5 Advises outside personnel to improve use of media techniques
6 Examines building blueprints to suggest improvements
5 Advises outside personnel to improve training center design
5 Gives multi-media presentation to demonstrate use of media
5 Discusses with audience to clarify media principles used
5 Examines prototype materials to suggest improvements/ evaluate
5 Serves on committees to disseminate information on media

TO PROMOTE INCREASED USE OF INSTRUCTIONAL TELEVISION (ITV)

5 Discusses with content specialists to identify appropriate parts of course
5 Designs model to clarify method/media decisions
5 Analyses research on ITV to identify relevant factors
5 Analyses cost effectiveness to demonstrate advantages of ITV
5 Discusses hardware systems to evaluate effectiveness
5 Observes hardware systems to evaluate effectiveness
6 Writes report to management to propose installation of ITV

TO REPORT TO MANAGEMENT

5 Analyzes work performed in unit to prepare work plans
5 Assigns work weeks to functions to prepare work plans
5 Estimates work to be performed to prepare work plans
5 Analyzes work plans to develop supporting budget
5 Develops staff time/output budget to support work plans
5 Writes progress report to describe work performed

TO INFORM TEACHERS ON MEDIA

Discusses with teachers to inform on materials and equipment
Assesses teaching needs to suggest appropriate materials
Circulates information to inform them on materials and equipment
Plans workshops to demonstrate AV services
Writes notice to announce demonstration
Operates AV equipment to demonstrate operation
Gives multi-media presentation to inform on AV services
5 Gives lectures to inform on library procedures
5 Gives lectures to inform on CAI programming
5 Gives lectures to inform on language laboratory operations

TO CONSULT WITH TEACHERS REGARDING IMPROVING TEACHING BEHAVIOR

6 Reads special project proposal to identify desired student/ teacher behavior
5 Speaks to teacher to receive request to consult
5 Writes on form to mark frequency/type student responses
5 Compares student form with desired responses to identify discrepancies
5 Analyzes teacher form/behavior to identify what is causing student difficulties
5 Discusses with teacher to explain student behavior not being met
5 Discusses with teacher to explain teacher behavior causing problem
5 Listens to teacher to encourage suggested alternatives
5 Instructs teacher to suggest alternative behaviors
5 Confers with principal to explain suggestions made to teacher
5 Confers with principal to explain how can help teacher
5 Confers with principal to identify project problems
5 Instructs principal to explain use of project material
5 Observes teacher behavior to note improvements in teacher behavior
5 Compares old form/new responses to identify improved student responses
5 Compares old form/new responses to identify improved teacher behavior
5 Discusses with teacher to praise improved performance
5 Discusses with teacher to make further suggestions

TO ADVISE PRODUCT PLANNERS ON EDUCATION MARKET

5 Compiles suggestions of educators to suggest new products
5 Evaluates new product specifications to align with educational expectations
5 Evaluates changes in products to determine effect on educational application
5 Discusses with product planners to inform of educational needs

TO FACILITATE FULLEST USE OF COMPANY PRODUCTS

Identifies company products to inform educators
5 Resolves usage problems to assist educators
5 Conducts workshops on products to assist educators
5 Identifies need to produce pamphlet on product
5 Writes pamphlet to describe application of product
Discusses with salesmen to inform on company products

TO ASSIST CONTENT SPECIALIST IN DEVELOPING MATERIALS

5 Discusses with content specialists to define training problem
5 Poses alternative responses to define training problem
5 Evaluates course outline to identify coherent segments
5 Discusses with content specialist to develop associated task list
Gives instructions to content specialist to describe use of learning modes
5 Drafts lesson plan to meet training problem
5 Discusses with content specialists to assist in TV program design
5 Evaluates draft programs to assess methodology used

TO TEACH BASIC AUDIOVISUAL COURSE

6 Shows filmstrip to teach behavioral objectives
5 Describes approach to teach behavioral objectives
6 Conducts simulated task analysis to provide active learning
5 Encourages writing of objectives and tests to teach through active learning
6 Describes media requirements to teach use of media in instruction
6 Describes group size contingencies to teach use of media in instruction
5 Advises students to assist in teaching with media
5 Advises students to assist in multi-media presentations
Operates equipment to demonstrate equipment operation
5 Teaches over CCTV to instruct in media production
5 Teaches over CCTV to instruct in graphics technique
Operates TV camera to record session for ITV

5 Advises students to inform on graphics techniques
Operates movie camera to demonstrate to students
5 Advises students to assist in making film
5 Administers pre and post tests to reinforce teaching
Administers media skills test to evaluate student performance
5 Advises students to better master teacher relations
5 Advises students to inform on courses to take
5 Gives multi-media presentation to demonstrate use of media
Operates movie projector to show exemplary films
5 Discusses with students to clarify media principles

TO TEACH INTERACTION ANALYSIS

Operates audiotape recorder to tape classroom dialogs
6 Codes classroom dialogs to provide models for instruction
Operates copier to provide transparencies of matrices
5 Describes process of coding to teach how to code
Operates overhead projector to show matrices and coding
Operates audiotape recorder to playback classroom dialogs
5 Discusses with students to clarify coding disagreements
5 Role plays teacher in class to demonstrate teacher behavior

TO TEACH MICROTEACHING

5 Discusses with students to clarify issues
5 Discusses microteaching principles to prepare teacher for taping
5 Observes teaching episode to identify teacher behavior
5 Codes teaching behavior to provide model of behavior
6 Critiques videotape with teacher to point out teaching behavior
6 Discusses with teacher to suggest behavior improvements
5 Observes teacher reteaching to identify changes in behavior
5 Codes teaching behavior to provide model of new behavior
6 Discusses with teacher to identify behavior changes
5 Directs production of videotape to provide model for critique
5 Describes microteaching to inform student teachers
Operates videotape recorder to show teach/reteach to students

COMPETENCIES FOR TECHNICIANS IN MEDIA MANAGEMENT

ORGANIZATION MANAGEMENT OUTCOMES.

KEEPING OF PURCHASE RECORDS/ACCOUNTS

Deducts amount of purchase to record current balance
Operates card punch machine to record purchase
Operates adding machine to total monthly expenditures
4 Specifies delivery time/place to prepare purchase orders
4 Estimates cost per item to prepare price list
4 Signs forms to prepare purchase orders
4 Supervises secretary to prepare purchase orders
5 Supervises bookkeeper to credit district accounts

KEEPING OF WORK RECORDS/PAYMENT RECORDS

Writes number of hours worked to provide record for payment
Computes and records payments to keep record
Computes time worked to determine payment
3 Assesses fee using fixed rates to pay narrator
3 Computes total hours worked to provide payment to operators

KEEPING OF STUDENT RECORDS

Makes mark in register to record student presence
Records errors and frame number to record student progress
Writes post-test score to add to student record
Writes on student record to note student attendance
5 Assigns letter grades to record student progress

KEEPING OF MISCELLANEOUS RECORDS

Lists number of recordings made to keep record of work
Checks list to note returned questionnaires
Analyzes circulation records to compute usage figures
Adds up time equipment used to compute usage figures
Writes information on film in log book to record receipt of film
Writes comments of audience to record recommendations
Writes date in log book to record preview data
Collects completed work orders to have record of operation
Compares extant list with previous to compile list of new materials
3 Writes information on assignment to keep record
3 Receives forms from district to compile county totals
5 Supervises analysis of forms to compile county totals

BILLING OF CLIENTS

Writes materials and time spent to provide record for billing
5 Supervises secretary to bill districts

FILING OF MATERIALS

Files broadcast log to maintain record
Files telex sheets to maintain record
Files used printing masters to keep records/files
Files purchase orders and vouchers to keep records/files
Files purchase orders to keep track of those not received
Operates typewriter to update file cards
Files new information to update files
Files order sheets in folder to keep records/files

3 Compiles information on new materials to add to files
Alphabetizes check-out cards to prepare to file
Arranges shelf list cards to prepare for filing
Alphabetizes catalog cards to prepare for filing

MAILING/SHIPPING OF MATERIALS

Prepares film cartridge to mail to processor
Copies information from list to address questionnaire
Operates typewriter to type film mailing label
4 Gives instructions to have materials distributed
Tells secretary to transmit letter to applicants
4 Discusses with supervisor to define shipping arrangements

TYPING

Operates typewriter to type inventory
Operates typewriter to type order sheet
Operates typewriter to produce copy of business letter
Operates typewriter to type purchase orders
Operates typewriter to type equipment list
Operates typewriter to type repair request
Operates typewriter to type broadcast logs
Operates typewriter to type promotional material
Operates typewriter to type form request
3 Operates typewriter to type catalog
Uses tape recorder and typewriter to make transcript of proceedings

PERFORMANCE OF MINOR CLERICAL ACTIVITIES

Puts staples on folder to make storage envelopes
Operates spirit duplicator to make copies of inventory
3 Writes list of titles to prepare specialist preview list
3 Writes list of titles to prepare evaluation committee preview list
5 Supervises personnel to receive equipment/materials

ORDERING OF MATERIALS

Mails order form to manufacturer to place materials on order
Writes to producer to request materials for preview
Notes supplies needed to write requisition list
Fills out order form to order materials
3 Writes list of items and dates to order items for preview
3 Arranges materials requested to group order list
3 Lists materials/equipment costs to compile order list for purchase
4 Writes letters to manufacturers to remind of back orders
4 Writes letters to manufacturers to correct wrong orders
Talks with supervisor to report supply needs
3 Informs secretary to order film for purchase
3 Calls box manufacturer to order boxes
3 Calls designer to obtain copy for labels
3 Calls producer to obtain type style for labels
3 Calls printer to order labels
4 Calls unit ordering materials to inform of manufacturer delay
4 Calls manufacturer to confirm order
Checks level of supplies to determine need for orders

PURCHASING OF MATERIALS

3 Sends list to director to purchase materials
3 Sends order forms to district to initiate purchasing cycle
3 Assigns purchase order number to assure payment
5 Writes letter to manufacturer to cancel late orders
5 Reviews equipment order to approve for purchase
5 Compares list prices to determine best price
5 Makes decision to notify manufacturers to cancel late orders
5 Negotiates with management to institute open purchase account

ANALYSES OF ORGANIZATION COMPONENTS

4 Examines forms used to identify needed improvements
4 Examines current routing lists to identify major problems
4 Analyzes service requests to identify service needs
4 Writes memo to departments to clarify service needs
5 Analyzes project personnel/organization to determine decision makers
5 Analyzes manageability of project to determine constraints
5 Matches staff to activities to identify gaps in staff
5 Analyzes relations between functions to develop functional matrix
5 Reads project reports to identify current work
5 Analyzes budget submissions to identify new programs
5 Analyzes activities to determine staff/time/resources
4 Discusses with workers to identify major problems
4 Calls departments to clarify service needs

SCHEDULING MEETINGS/APPOINTMENTS

3 Selects meeting time and place to hold demonstration
3 Checks personal schedule to schedule time and date
4 Selects time and place to hold seminar
4 Checks calendar to set dates for evaluations
3 Calls auditorium coordinator to schedule evaluation sessions
3 Calls parents to arrange for meeting
4 Calls applicants to set time and place for interview
4 Calls building coordinator to arrange for room
4 Calls school to arrange for test audience
4 Discusses with training officer to arrange for pilot test
4 Contacts individuals or schools to obtain subjects for study
5 Speaks to students to arrange for lesson simulation
5 Speaks to students to end lesson simulation
5 Speaks with students/teachers to arrange for discussions with visitor

DETERMINING FINANCES/FINANCIAL CONSTRAINTS

4 Analyzes budget to determine money available
4 Analyzes cost of model to determine if feasible
4 Analyzes budget to determine cost constraints
4 Reads budget to discover fiscal resources
4 Submits proposal to contracts office to acquire overhead figures
4 Analyzes study costs to determine money constraints
5 Analyzes monetary considerations to determine financial constraints
5 Reads architect's budget to ascertain proposed cost
5 Analyzes staff needs to determine staff salary needs
5 Analyzes budget to determine resources available
4 Measures costs of instruction to compute money saved
4 Assesses requests for new equipment/materials to determine purchase priority

SEEKING FUNDS

3 Transmits proposal to funding to obtain funds for research study
4 Develops budget to support research project
4 Writes up budget to support proposal

5 Writes memos to management to acquire funds for operation
5 Justifies expenditures to acquire funds for operation
5 Contacts colleagues to identify appropriate funding sources
5 Negotiates with management to acquire funds for operation
5 Reads budget to identify internal support money
5 Reads newsletters/money statements to identify possible money sources
5 Reads journals to identify appropriate funding sources

COMPUTING BUDGETS/FINANCIAL RECORDS

3 Operates adding machine to compute total budget
4 Performs cost analysis to compute cost product data
4 Calculates money available to compute budget
4 Analyzes production plan to develop production budget
4 Estimates cost for each segment to develop cost analysis
4 Adds estimated costs for segments to develop cost analysis
4 Analyzes pay schedules to compute staff budget
4 Assesses equipment needs to compute equipment budget
4 Assesses materials needs to compute materials budget
5 Projects system growth to develop projected budget
5 Analyzes work plans to develop supporting budget
5 Lists staff time and rates to determine staff budget
5 Lists equipment needs and costs to determine equipment budget
5 Lists materials needs and costs to determine materials budget
5 Totals costs to determine total budget
5 Assesses expenditures to write financial plan
5 Compiles sub-budgets to develop budget draft
5 Incorporates improvements in budget to develop final budget
4 Examines alternate systems to develop initial budget
3 Lists projected equipment needs to provide budget information

APPROVING/EVALUATING OF WORK/PRODUCTS

3 Reads bill from producer to approve for payment
4 Submits proposal to administration to approve for submission
4 Reviews purchase orders to approve for purchase
4 Reviews bills to certify for payment
4 Reads notification from board to approve vendor selections
5 Reads progress reports to evaluate project progress
5 Compares products/activities with goals to evaluate project performance
5 Compares products/activities with goals to assure quality of work
5 Compares products/activities with goals to suggest improvements
5 Compares past and present budgets to approve/disapprove budget
5 Compares budget and past performance to approve/disapprove budget
4 Supervises staff to insure work is completed
5 Talks with staff to evaluate programs
5 Discusses with advisory committee to evaluate program improvements

DETERMINING NEED FOR EQUIPMENT/FACILITIES/PERSONNEL/PROCEDURES

Counts number of staff members to ascertain facilities needs
4 Analyzes production plan to determine equipment needs
4 Searches in file to select suitable location
4 Analyzes number and type activities to ascertain facilities needs
4 Reads floor plan to examine current facilities
4 Reads current equipment inventory to identify equipment on hand
4 Analyzes production plan to determine talent/crew needs
5 Analyzes center inventories to list staff, equipment and materials
5 Analyzes relations and functions to define duties of personnel
5 Examines work of organization to identify how facilities can help
5 Examines staff communications/interaction to identify how facilities can help
5 Analyzes organization activities to ascertain equipment needs
5 Assesses cost restraints to determine limits of project
5 Listens to staff desires to ascertain facilities needs
5 Listens to staff to ascertain equipment needs
5 Speaks to technical workers to ascertain jobs to be done
5 Speaks to technical workers to ascertain workers needed
5 Selects three architects to discuss facilities in depth

MAKING AVAILABLE EQUIPMENT/FACILITIES/PERSONNEL

4 Analyzes purchase requests to determine which catalog to search
4 Reviews new employee papers to determine size/number of sessions
4 Makes arrangements to transport crew/talent to location
5 Estimates staff needs to fill described jobs
5 Writes memos to advise hiring
4 Calls appropriate agency to schedule location
4 Calls warehouse to rent warehouse for storage
5 Selects personnel to fill key positions in structure
5 Speaks to realtors to seek additional space off campus

CHECKING FOR ACCURACY

Compares new materials with invoice to check that order is complete
Checks invoice with purchase order to ensure both are correct
4 Checks typed budget to ensure correct

DETERMINING AND ENFORCING TIME CONSTRAINTS/DEADLINES

3 Writes time schedule to assign completion dates
4 Defines PERT chart to assign completion dates
4 Analyzes time limits to determine time constraints
5 Analyzes activities to determine time for each activity
4 Calls contractor periodically to ensure product on time
5 Speaks to technical workers to ascertain amount of time needed
4 Measures time taken to compute time saved
5 Reads proposal to determine dates for evaluation reports

WRITING TIME/PERT CHARTS

4 Combines times to develop project timeline
4 Analyzes flow to identify major steps
4 Writes chart to formalize PERT schedule
5 Writes operations plan to organize course development
5 Estimates time factors to organize course development
5 Analyzes relations of activities to develop PERT schedule
5 Analyzes time for each activity to develop PERT schedule
5 Analyzes project limits to develop PERT schedule
5 Assigns completion dates to design project deadlines

SELECTION OF PERSONNEL/MATERIALS/EQUIPMENT AND PROCEDURES FOR MANAGEMENT

4 Writes form letter to inform applicants of rejection
4 Evaluates list of contractors to select most appropriate
4 Lays out samples to select equipment/materials vendors
5 Translates guidelines to select committee members

5 Analyzes program projections to determine additions needed
5 Compares equipment on hand and needs to identify equipment to be bought
4 Calls selected applicant to notify of selection
4 Speaks to client to set up review panel
5 Writes report to board of education to indicate vendor selections

ADMINISTRATION/COORDINATION OF PROJECTS

4 Gathers employee information to distribute to new employees
4 Assigns work to staff to meet goals of unit
5 Surveys market potential to decide on number of copies
5 Rereads contract to define desired outcomes
5 Analyzes goals of project to define needed activities/products
5 Translates project activities to develop job descriptions
5 Analyzes unit request to determine need for training
4 Requests course developers to obtain size and type of program
4 Negotiates contract with customer to initiate project development
5 Speaks to staff to identify project interests
5 Listens to outside input to improve product
5 Reads proposal to determine audience for reports

MONITORING/CHANGING OF ORGANIZATION STRUCTURE AND GOALS

4 Analyzes service needs to propose new service operation
5 Proposes new documentation to improve research library
4 Discusses with departments to propose new service operation
5 Listens to feedback to revise structure
5 Discusses with auditor to identify feasible organizational structures
5 Discusses with auditor to identify acceptable organizational structures
5 Confers with colleagues to evaluate structure matrix
5 Confers with colleagues to evaluate new structure
5 Speaks to colleagues to become involved in new ventures
5 Discusses projects/money with staff to identify future priorities
5 Discusses with technical experts to design new organizational model

WRITING OF WORK PLANS/MANAGEMENT REPORTS

5 Analyzes production details to write production plan
5 Analyzes work performed in unit to prepare work plans
5 Assigns work weeks to functions to prepare work plans
5 Estimates work to be performed to prepare work plans
5 Develops staff time/output budget to support work plans
5 Writes progress reports to describe work performed
5 Reviews project progress to present report to management/customer
5 Discusses with staff to revise work plans
5 Converses with students to assign work areas
5 Evaluates student performance to write evaluation report

CLARIFICATION OF MANAGEMENT GOALS

5 Reads assignment outline to clarify general idea of project
5 Reads previous proposals to obtain background information
4 Discusses with client to clarify assignment
4 Discusses with teaching personnel to clarify teaching assignments
5 Consults with client to determine client roles
5 Consults with client to determine company roles
5 Negotiates with funding source to clarify details of proposal
5 Asks questions to clarify general idea of project
5 Instructs customer in logistics to define work/money/time relationships

PERSONNEL MANAGEMENT OUTCOMES.

HIRING OF STAFF

4 Makes recommendations to director to assist in hiring
5 Reads file of prospective staff to attempt to fill staff gaps
5 Reviews application forms to select applicants for interview
5 Reads resumes of current staff to identify possible project staff
5 Reads resumes to select applicants for interview
5 Selects short list of applicants to do initial interviewing
5 Evaluates applications to determine trainees
5 Reviews job applications to make recommendations
4 Calls personnel office to hire shipping personnel
4 Calls unit head to ask recommendations on trainer
4 Calls trainer chosen to notify of selection
5 Identifies field personnel to select program developers
5 Hires personnel to staff research project
5 Speaks with prospective staff to evaluate qualifications
5 Describes project and company to initiate job interview
5 Interviews job applicants to select most suitable
5 Evaluates recommendations to determine best trainer
5 Speaks to current staff to identify possible project staff
5 Questions applicant to ascertain qualifications
5 Identifies appropriate staff to staff proposed program

EVALUATION/ASSESSMENT OF PERSONNEL OUTPUT

4 Supervises student aide to ensure correct performance
5 Assesses staff work to write performance reports
5 Reviews worker evaluation reports to determine acceptance of work
5 Discusses with teacher to praise improved performance
5 Speaks to technical workers to review progress periodically
5 Evaluates employee performance to assess employee progress
5 Discusses with staff to evaluate work performed
5 Observes staff work/products to evaluate work performed
5 Evaluates employee performance to write evaluation report
5 Discusses with peers to determine validity of reports
5 Discusses with worker to determine validity of reports
5 Discusses with supervisor to determine validity of reports
5 Evaluates teaching to assess work of teaching personnel
4 Gives instructions on operation to supervise assistants

ASSIGNMENT OF WORK TO PERSONNEL/OUTSIDE CONSULTANTS

4 Assigns work on daily basis to schedule work loads
5 Assesses work to be performed to approve requests for leave
3 Uses telephone to call repairman
3 Calls talent to request them to audition
5 Calls associate to request assistance in presentation
3 Identifies appropriate persons to ask them to preview films
3 Chooses appropriate narrator to obtain script narrator

ASSISTANCE IN COMMUNICATIONS BETWEEN MANAGEMENT AND STAFF

3 Operates telex machine to communicate with network
5 Writes procedural manual to inform new employees
5 Writes recommendations to suggest promotions and awards
5 Conducts staff meetings to relay administrative directives
3 Talks with new employees to inform of procedures
3 Writes performance reports to inform supervisor
5 Negotiates with personnel department to suggest promotions and awards
5 Discusses with staff to relay/interpret administrative regulations
5 Persuades architect to meet staff to ensure staff input

INTERACTION WITH INDIVIDUALS AND GROUPS

3 Schedules meeting with directors to discuss proposal
4 Attends staff evaluation session to lead discussion
4 Attends evaluation committee meeting to lead discussion
5 Summarizes points made to lead evaluation session
5 Writes suggestions to lead evaluation session
5 Chooses subject matter to encourage seminar discussion
5 Speaks with client group to develop rapport with group
5 Speaks with individual members to reduce specific inhibitions
5 Speaks to project directors to persuade to produce presentation
5 Operates tape recorder and microphone to interview people in
5 street
3 Drives to schools to consult with teachers
5 Advises students to better master teacher relations
5 Explains material to evaluators to lead evaluation session
5 Shows materials to teachers to lead evaluation session

RESEARCH-THEORY OUTCOMES.

COLLATION/SUMMARIZING OF DATA IN PREPARATION FOR ANALYSIS

5 Supervises personnel to ensure correct data collation
Counts responses in each category to summarize data
Tallies responses to summarize data
4 Collates data to measure effects of treatments
4 Prepares tally sheet to summarize data
5 Codes teacher behavior to categorize according to scale
5 Sets up data translation procedure to obtain answers from data
5 Translates objectives to define categories of responses
5 Reads data to determine if categories fit
5 Classifies each response to put responses into categories
5 Listens to tapes of student sessions to summarize tutorial strategies

ANALYSIS OF DATA

4 Speaks with researcher to understand data to be analyzed
5 Supervises personnel to ensure correct data analysis
4 Compares test group with control to analyze effects of treatment
4 Operates calculator to perform statistical analysis
4 Reads statistical tables to perform statistical analysis
4 Computes money/time saved to determine cost effectiveness
4 Divides cost by market to determine unit product cost
5 Sets up data processing procedure to analyze data
5 Analyzes data to measure effects of treatments
5 Translates data into formula to perform statistical analysis
5 Analyzes student errors to evaluate lesson/tutor strategies
5 Analyzes test results to compute effectiveness of TV
5 Performs statistical analysis on data to quantify teacher behavior
5 Performs statistical analysis to measure teacher attitude
5 Performs statistical analysis to analyze data

INTERPRETATION OF DATA

5 Compiles suggestions of educators to suggest new products
4 Compares data analysis with tables to determine significance of data
5 Compares solutions/information to evaluate proposed solutions
5 Analyzes reality test results to revise model
5 Examines objectives/data analysis to interpret meaning of data
5 Analyzes tutorial strategies to identify common elements
5 Analyzes tutorial strategies to identify successful elements
5 Compares observed behavior to model to identify teacher behavior problem
5 Interprets analyzed data to identify most effective technique
5 Identifies similar products to determine competition
5 Evaluates new product specifications to align with educational expectations
5 Evaluates changes in products to determine effect of educational application

DESIGN OUTCOMES.

PRODUCTION OUTCOMES.

EVALUATION-SELECTION OUTCOMES.

DIAGNOSIS OF EQUIPMENT DEFECTS

Tests language lab equipment to locate operating flaws
Uses tube tester to identify defective tubes
3 Operates projector to determine non-functioning part
3 Consults drawing and parts list to identify non-functioning part
3 Operates record player to determine non-functioning part

ASSESSMENT OF MATERIALS

3 Selects time and date to preview presentation
4 Reads memos from teachers to determine materials needs
4 Calls teachers in school to evaluate materials
4 Calls students/teacher in a class to evaluate materials
4 Asks questions to determine application/use
4 Discusses with staff to clarify materials needs
4 Requests content specialists to preview old films
4 Discusses with teacher to evaluate materials available
4 Discusses with teaching personnel to evaluate success of course
5 Asks students questions to determine if objectives are met
4 Analyzes technical quality to reject poor quality items
4 Previews old films to evaluate physical condition
4 Analyzes produced visuals to evaluate quality
4 Previews presentation to evaluate presentation
4 Listens to tape to evaluate sound quality
5 Analyzes present curriculum needs to reject irrelevant materials
5 Analyzes future curriculum needs to reject irrelevant materials
5 Compares materials with teachers' needs to reject irrelevant items
5 Combines factors to eliminate obvious rejects
5 Designs evaluation forms to evaluate effectiveness of course
5 Analyzes program to assess logical development
5 Evaluates slides and tape to improve quality of material
5 Evaluates take to accept or reject film
5 Observes run-through to suggest improvements in film
5 Views material to do initial screening
Operates movie projector to preview film
4 Plays back videotape to check quality of recording
5 Pilot tests to evaluate effectiveness of materials
5 Teaches course to evaluate effectiveness of materials
5 Observes student behavior to evaluate presentation effectiveness
5 Analyzes question/answers to evaluate presentation effectiveness

ASSESSMENT OF DEVICES

5 Discusses hardware systems to evaluate effectiveness
5 Performs cost analysis to recommend equipment
5 Compares unit product cost to determine product competitiveness
5 Observes hardware systems to evaluate effectiveness
5 Evaluates new equipment to assess compatibility

SUPPORT-SUPPLY OUTCOMES.

MAINTENANCE OF EQUIPMENT/MATERIALS

4 Analyzes repair history to identify equipment operation problems
Inspects returned materials to check for damage
Inspects returned equipment to check for damage
Cleans lenses on projectors to keep in working order
Cleans AV equipment to keep in working order
Replaces jackets on records to keep clean
Operates air compressor to remove dust from projector
Cleans off points and rollers to maintain film inspector
Puts plastic jackets on books to protect materials
Cleans and dusts materials to maintain condition
Uses cotton swabs and alcohol to clean heads on videotape recorder
Cleans and refills diazo copier to maintain
Refills printing solution to maintain offset machine
Cleans rollers to maintain offset machine
Cleans work area to keep clean/organized
Demagnetizes heads on recorders to keep in working order
Sprays controls in console to clean
Oils AV equipment to keep in working order
Cleans language lab equipment to ensure good working order
Changes projector bulbs and fuses to maintain in working order
4 Maintains electrical systems to ensure working order

PICKING UP AND DELIVERY OF EQUIPMENT AND MATERIALS

Marks list for packer to inform of materials needed
Gives instructions to custodian to move heavy equipment
Calls custodian to have materials delivered
3 Calls supplies department to request table and screens delivery
Selects specified equipment to take to classroom
Loads van with equipment to deliver to location
Unloads truck to deliver equipment
Wheels truck to classroom to deliver equipment
Uses checklist to locate materials for delivery
Picks up and carries boxes to load in van
Packs filmstrips in mailing tube to prepare for delivery
Wheels dollies to deliver equipment
Carries equipment to classroom to deliver to classroom
Loads equipment on cart to deliver to conference room
Pushes cart to deliver to conference room
Unloads equipment to deliver to conference room
Packages materials to prepare for delivery
Packs films in box to return to library
Packs up equipment to return to AV center
Carries film to viewing room to await showing
3 Drives to location to deliver equipment
3 Drives car to pick up defective equipment
3 Drives car to deliver repaired equipment

REPAIR OF EQUIPMENT

3 Calls repairman to request repair of equipment
4 Assigns work to assistants to have equipment repaired
Selects new tubes to replace defective tubes
Tests projector fan to ensure working order
Uses tube tester to test tubes
Replaces needle to restore working order
Uses stroboscopic disc to check turntable speed
Removes stuck copies in copier to restore operating condition
Changes bulbs in overhead projector to restore working order
Repairs lecterns to restore working order
Replaces fuse to restore working order
Replaces tubes to restore working order
Operates equipment to test repair
Operates equipment to test reported malfunction
4 Repairs television receivers to restore working order
4 Repairs language lab console to restore working order
4 Repairs electrical systems to restore working order
4 Repairs CCTV studio equipment to restore working order
5 Repairs FM transmitter to restore working order

KEEPING OF REPAIR RECORDS

Writes data on repair form to keep record of repair
Writes information on card to keep record of repair
Writes information on card to record damaged materials
Lists equipment repaired weekly to keep weekly records
Lists equipment repaired daily to keep daily records
Writes information on card to record periodic maintenance
3 Writes information on each repair to maintain repair history

REPAIR AND INSPECTION OF MATERIALS

Carries films to work area to prepare for inspection
Operates film inspector to inspect and repair film
Inspects returned materials to check for damage
Removes damaged materials to keep from circulation
Visually inspects tapes to check for breaks

KEEPING OF EQUIPMENT INVENTORY

Copies information on card to prepare inventory card
Copies information on order form to mail to library
Lists equipment received to compile new equipment inventory
Copies information from schedule cards to list equipment holdings
Compares holdings with inventory to check accuracy of inventory
Operates typewriter to list inventory of holdings
3 Copies from inventory to list equipment and materials

LABELLING OF EQUIPMENT AND MATERIALS

Copies information from file card to identify machines
Files card in equipment file to have record of machine
Replaces labels on equipment to insure identification
Stencils label on equipment to identify materials
Stamps ownership mark on materials to identify materials
Ties tag on machine to identify machine
Affixes code number on chart to identify
Affixes code number on chart to identify materials
Assigns code number to chart to keep record
Labels kits of materials to identify materials
Labels cartridges to identify for future use
Puts label on boxes to identify boxes

STORAGE OF EQUIPMENT AND MATERIALS

Writes shelf list cards to identify location of materials
4 Gives instructions to have old film destroyed
5 Supervises personnel to store equipment/materials
4 Analyzes extant materials to remove out-of-date materials
Places inspected films on shelves to store for future use
Carries equipment to room to store equipment
Unpacks returned filmstrips to return to storage
Sorts materials to prepare for shelving
Places materials on shelves to store for next use
Replaces equipment on shelves to store for future use
Carries boxes to store room to store boxes

VERIFICATION OF ORDERS/LISTS

4 Calls producer to ascertain correct title
3 Checks catalog notation to insure accuracy
Compares equipment with purchase order to ensure order is correct
Compares list with past list to check accuracy
Reads catalog to verify citation of film
Checks title and number of film to insure accuracy
Checks student schedule to identify correct assignment
3 Uses reference books to check accuracy of film notation

COMPILING OF FILES/CHECKLISTS

3 Files references by subject area to compile materials file
5 Writes briefing guide to provide briefing guidelines
5 Selects articles on media to compile library of materials
5 Analyzes crucial operating factors to design readiness checklist
5 Lists equipment operation problems to list crucial operating factors
5 Analyzes catalogs and files to list related materials

TRANSMISSION OF VIDEOTAPES

5 Observes builders at work to ensure specifications are met
Operates videotape recorder to transmit programs from network
Schedules time and date to arrange for CCTV broadcast
3 Prepares VTR set-up to ready for playback
3 Operates VTR to playback recording

DISTRIBUTION/CIRCULATION OF MATERIALS

Reads daily schedule to identify materials needed
4 Coordinates materials procurement to provide needed audio and visuals
5 Supervises personnel to redistribute equipment/materials
Pastes date-due slips in books to prepare for circulation
Sets up circulation desk daily to prepare for distribution
Pre-stamps date due cards to prepare for distribution
Matches films with order slips to assign film to requestor
Checks lists to determine if materials available
Locates requested material to assist requestor
4 Plans new routing list to improve circulation

SCHEDULING OF MATERIALS/EQUIPMENT/FACILITIES

Files copy of schedule card to keep record
Writes work order to record operation needed
3 Schedules materials to reserve for use
Writes date scheduled to record date needed
Writes requestor's name to reserve materials
Writes in time chart to schedule conference rooms
Copies information to worksheet to reserve projectionist
Files copy of work order to have record of operation
3 Schedules facilities to reserve for use
Discusses with requestor to schedule preview time
Talks with requestor to get information on materials needs
Calls room coordinator to schedule conference rooms
Calls tutor to arrange for student session
Calls sound studio to schedule time for recording
Locates schedule card to record date needed
Chooses alternate date to reserve materials
Checks schedule book to determine if materials available
3 Schedules bus and driver to reserve for field trip
3 Checks materials for learning activities to check if ready for student
4 Plans new scheduling system to improve scheduling
3 Schedules equipment to reserve for use

PREPARATION FOR UTILIZATION OF FACILITIES/ EQUIPMENT

5 Visits presentation location to review physical facilities
3 Discusses with instructor to identify program need
4 Discusses with presentor to clarify presentation details
5 Discusses with instructor to determine room size and character
3 Designs cue sheet to assist projectionist and speaker
3 Surveys room to plan VTR set up
4 Organizes materials in groups to prepare for evaluation sessions
Sets up appropriate equipment to prepare for conference session
Arranges furniture to prepare for conference and preview
Loads projector to prepare for use
Lays out materials in lab to prepare for student use
Turns on equipment to prepare for student use
3 Sets up console to prepare for instructor

CATALOGING OF MATERIALS

Writes data in catalog to update catalog
Files catalog cards to keep records
Lists new materials in catalog to update catalog
4 Writes short description of film to catalog film
Compares title with catalog to determine if already catalogued
Determines standard notation to prepare to catalog
3 Lists subject headings to materials to identify them
3 Assigns sequential control numbers to catalog new materials
3 Assigns subject headings to classify materials
3 Removes out-of-date cards to keep catalog files current
5 Adapts commercial catalog cards to catalog to local needs
5 Checks classification list to cross-index materials
5 Reads new materials to classify materials
4 Reads review of materials to cross-index materials
5 Reads curriculum guides to classify materials in curriculum areas

OPERATION OF COMPUTER TERMINAL

Operates computer terminal to print out tutorial strategy
Operates computer terminal to list messages received
Operates computer terminal to make program tapes
Operates computer terminal to delete old programs

INSTALLATION OF EQUIPMENT

3 Builds soundproof ceiling to equip CCTV studio
5 Hooks up equipment to install equipment
Unpacks equipment to prepare for installation
4 Reads physical schematic to determine equipment layout
4 Examines floor plan to determine location for components
4 Reads wiring diagrams to determine electrical layout
4 Reads specifications to determine contents and number

PREPARATION FOR MULTI-MEDIA PRESENTATION

Stands up screens to prepare for presentation
Places tables in position to prepare for presentation
Tapes extension cords to floor to prepare for presentation
Tests control device to prepare for presentation
3 Sets up equipment to prepare for multiscreen presentation
3 Sets up control device to prepare for presentation
4 Analyzes physical facilities to determine placement of equipment and audience
4 Runs through presentation to check for technical accuracy

ORDERING OF FILMS/MATERIALS/EQUIPMENT

Mails order sheets to order films
3 Discusses with student to arrange time for learning activity
3 Calls teacher/students to arrange for human components of learning activity
3 Calls instructional materials center to schedule materials for learning activity
3 Calls producer to obtain sample components
3 Calls equipment supplier to request equipment delivery and set up
4 Analyzes usage figures to project equipment needs
4 Analyzes equipment needs to plan equipment acquisition

LOCATION OF MATERIALS

5 Analyzes materials file to select references
5 Researches materials files to locate appropriate materials

ORDERING OF REPLACEMENT MATERIALS

Lists missing equipment to request replacements
Lists missing items to prepare replacement list
Writes to central office to request replacement items
3 Writes order forms to order spare parts
4 Calls producers to request replacement materials
Observes stock of paper to insure adequate supplies
4 Estimates spare parts needed to stock repair service

TRANSMISSION OF RADIO BROADCASTS

Reads aloud to announce station identification
Reads aloud to make radio announcements
Observes audiometers to monitor broadcast signal
Operates broadcast console to switch program sources
Arranges tapes in rack to prepare to broadcast

UTILIZATION OUTCOMES.

PREPARATION FOR LEARNING ACTIVITIES

Prepares materials and equipment in lab to prepare for student use
4 Travels to school to be available to students

PRESENTATION OF INFORMATION

3 Schedules meeting with director to show presentation
3 Schedules meeting with writer to show presentation
Operates media equipment to present information
Operates slide projector to show presentation
Operates equipment to show multiscreen presentation
3 Reads script and shows slides to show raw presentation to client
5 Instructs students to explain concept/information
5 Speaks to group to provide input where appropriate
5 Speaks to students to present lecture information

UTILIZATION-DISSEMINATION OUTCOMES.

DISTRIBUTION OF INFORMATION

Mails copy of work order to inform instructor
Sorts incoming mail to distribute in boxes
Circulates flyers to inform staff of new products
Lists operating flaws in equipment to inform repair technician
Writes notifications to inform teacher of film arrival
Distributes information to get information to employees
3 Transmits report to funding source to disseminate research findings
3 Collates project literature to give materials to visitor
4 Writes notice to publicize demonstration
4 Compiles list of recommended equipment to inform staff
4 Lists recommended equipment per unit to inform staff
4 Lists recommended manufacturers to inform staff
4 Writes instructions to inform production units
5 Writes memos to field personnel to inform on progress of course
5 Writes report to management to inform on progress of course
5 Assesses cost benefits of training to inform management
5 Translates technical language to describe project to management/customer
5 Writes report on project to present progress to management/customer
5 Edits report on project to disseminate findings
5 Develops new procedures to route information
5 Writes reports to disseminate findings
5 Conducts briefings to inform on progress of course
4 Writes summary of data to report to supervisor
Distributes messages received to inform staff
Sends notifications to requestor to inform of date scheduled
3 Sends reactions to producers to inform producers
3 Sends suggestions to director to inform director of needs
4 Circulates information to inform on materials and equipment

DISCUSSION (TWO-WAY INTERACTION)

4 Uses telephone to answer service questions
Converses with supervisor to discuss repair
5 Discusses with client group to answer questions regarding evaluation
5 Discusses microteaching principles to prepare teacher for taping
5 Discusses with students to clarify issues
5 Discusses with visitor to answer questions
5 Listens to visitor/student/teacher discussion to provide help if needed
5 Discusses with visitor to summarize activities
5 Discusses with students to clarify media principles
5 Discusses with student to explain different activities
5 Critiques videotape with teacher to point out teaching behavior
5 Observes teacher teaching to identify changes in behavior
5 Conducts seminar to encourage discussion

TEACHING (FORMAL INTERACTION)

5 Designs conference to inform management of changes
4 Gives instructions to students to orient them to pilot test
4 Discusses with students to clarify elements of composition
4 Discusses with students to clarify lenses/setting decisions
4 Supervises use of instamatic to provide experience in photography
4 Discusses camera pictures to clarify principles of composition/setting
5 Discusses with teacher to suggest behavior improvements
5 Speaks to management and customer to present project progress
5 Supervises training conferences to teach new teacher behaviors
Operates slide projector to make presentation on project

4 Gives directions to students to assist in equipment operation
5 Gives lectures to inform students
5 Teaches over CCTV to instruct in media production
5 Advises students to assist in making media production
5 Advises students to assist in multi-media presentations
5 Administers pre- and post-tests to reinforce teaching
3 Shows how to replace bulbs to inform aides
3 Explains operation of equipment to inform instructor
4 Teaches preventive maintenance to inform repairmen
3 Shows how to operate dictaphone to instruct students
4 Demonstrates equipment operation to train student workers
5 Describes microteaching to inform student teachers
5 Explains tasks to be done to train staff
5 Encourages writing of objectives to teach thru active learning
5 Encourages writing of objectives and tests to teach through active learning

EXPLANATION (INFORMAL INTERACTION)

Writes date and name on card to inform requestor
3 Uses telephone to answer routine questions
4 Converses with assistants to advise on repairs
4 Talks with teacher to inform of procedure
4 Discusses with teacher to explain references sources
4 Speaks to visitor or superior to receive request for information
4 Calls producers to inform of mistakes in product
4 Calls colleagues to inform of staff needs
4 Calls placement agency to inform of staff needs
4 Speaks to technical workers to inform of deadlines
5 Discusses with client group to create non-threatening evaluation
5 Discusses with student to explain logistic aspects of learning activity
5 Discusses with student to explain unique components of learning activity
5 Discusses with student to explain assessment procedures
5 Discusses with student to explain handling of materials
5 Discusses with student/parent to explain student progress
5 Discusses with teacher to explain student behavior not being met
5 Discusses with teacher to explain teacher behavior causing problem
5 Discusses with principal to explain suggestions made to teacher
5 Discusses with teacher to make further suggestions
5 Discusses with product planners to inform of educational needs
5 Speaks to technical workers to explain PERT chart
5 Speaks to student to explain post-test
5 Speaks to teacher to receive request to consult
5 Speaks to architects in person to explain facilities needs
Drives visitor to school to show project in operation
5 Instructs group to explain facilitator role
5 Instructs group to explain content/process difficulty
5 Advises students to inform on courses to take
4 Discusses with teachers to inform on materials and equipment
5 Instructs client group to explain purposes of evaluation
5 Instructs client group to explain role of evaluator
5 Instructs customer in II to define problems in process
5 Instructs customer in II to define changed concepts of instruction
5 Instructs customer in II to define effects on curriculum
5 Instructs customer in II to define new role of testing
5 Instructs visitor to describe layout of classroom
5 Serves on committees to disseminate information on media
5 Instructs teacher to suggest alternative behaviors
5 Instructs supervisor to explain use of material
5 Advises teachers to inform of materials available
5 Advises on film making techniques to inform staff

COMPETENCIES FOR TECHNICIANS IN MEDIA PRODUCT DEVELOPMENT

ORGANIZATION MANAGEMENT OUTCOMES.

ASSIGNMENT/COORDINATION OF WORK OF UNITS/ PERSONNEL

3 Gives instructions to staff to have preview materials ordered
3 Writes standard production order to coordinate production
3 Writes time schedule to assign completion dates
5 Writes memos to departments to request review of extant materials
4 Transmits script to narrator to have tape produced
4 Reads assigned script to assess work to be done
4 Routes incoming correspondence to assign for action
5 Estimates number of copies needed to order publications
5 Writes memo to subordinates to require budget submissions
Converses with supervisor to clarify assignment
3 Gives instructions to secretary to have budget typed
4 Calls production unit to arrange for production of visuals
4 Calls school to arrange for evaluation data collection
4 Calls computer center to arrange for data processing
4 Supervises secretary to have tests typed/duplicated
4 Requests secretary to have list of old films compiled
4 Gives instructions to lab to have prints produced
4 Discusses with publications unit to organize mass production
4 Identifies teaching personnel to assign to course
5 Explains work of organization to give architect design specifications
5 Explains how facilities aid work to give architect design specifications
5 Explains communications/interaction needs to give architect design
Specifications
5 Explains special needs of staff to give architect design specifications
5 Explain financial constraints to give architect design specifications
5 Discusses with staff to determine work assignments

DETERMINING AND ENFORCING TIME CONSTRAINTS/ DEADLINES

3 Writes time schedule to assign completion dates
4 Defines PERT chart to assign completion dates
4 Analyzes time limits to determine time constraints
5 Analyzes activities to determine time for each activity
4 Calls contractor periodically to ensure product on time
5 Speaks to technical workers to ascertain amount of time needed
4 Measures time taken to compute time saved
5 Reads proposal to determine dates for evaluation reports

PERSONNEL MANAGEMENT OUTCOMES.

HIRING OF STAFF

4 Makes recommendations to director to assist in hiring
5 Reads file of prospective staff to attempt to fill staff gaps
5 Reviews application forms to select applicants for interview
5 Reads resumes of current staff to identify possible project staff
5 Reads resumes to select applicants for interview
5 Selects short list of applicants to do initial interviewing
5 Evaluates applications to determine trainees
5 Reviews job applications to make recommendations
4 Calls personnel office to hire shipping personnel
4 Calls unit head to ask recommendations on trainer
4 Calls trainer chosen to notify of selection
5 Identifies field personnel to select program developers
5 Hires personnel to staff research project
5 Speaks with prospective staff to evaluate qualifications
5 Describes project and company to initiate job interview
5 Interviews job applicants to select most suitable
5 Evaluates recommendations to determine best trainer
5 Speaks to current staff to identify possible project staff
5 Questions applicant to ascertain qualifications
5 Identifies appropriate staff to staff proposed program

RESEARCH-THEORY OUTCOMES.

DESIGN OUTCOMES.

PRODUCTION OUTCOMES.

PRODUCTION OF OVERHEAD TRANSPARENCIES

Applies tape or hinges to mount transparencies
Assembles sheets of film on mount to produce overlays
Operates 3m machine to make transparency of hard copy
Operates diazo machine to make transparencies
Attaches adhesive color material to add color to master

PRODUCTION OF PHOTOGRAPHIC MATERIALS

3 Gives directions to art department to make slides into test print
4 Advises photographer to assist in location shooting
Uses sealing iron to mount slides
Uses slide mounts to mount slides
Inserts film cartridge to load camera
Operates copy camera to photograph copywork
3 Mixes chemicals to process film
Processes black-and-white film to develop film
4 Operates contact printer to make prints
3 Operates copy camera to make photographs
3 Inserts film to load camera
3 Operates camera to make photograph
3 Operates copy process camera to make halftone copy
3 Sets up tripod and camera to prepare for shooting
3 Tests light level to set camera
4 Processes color film to develop film
4 Selects appropriate equipment to perform photographic assignment
4 Selects appropriate film to perform photographic assignment
Chooses appropriate chemicals to process black-and-white films
5 Chooses appropriate chemicals to process film
5 Chooses appropriate paper to print film

PRODUCTION OF PRINTED MATERIALS

3 Gives instructions to have copies made
Operates adhesive coating machine to apply wax to materials
Operates spiral binding machine to bind materials
Applies lettering to master to prepare master for printing
Operates copycat machine to prepare plates for offset
Operates offset press to print materials
3 Assembles materials on master to prepare copy for printing

PRODUCTION OF AUDIO RECORDINGS

3 Gives signals to technical staff to produce audio recording
4 Gives instructions to studio staff to have master made of audio recording
3 Operates stopwatch and recorder to time scratch tape
4 Makes arrangements to produce duplicates of tape
5 Gives instructions to sound crew to direct audio recording
3 Operates tape recorder to record lesson simulation
3 Operates tape recorder to record class proceedings
Operates magnetic erasing machine to erase audiotapes
Operates high speed duplicator to produce copies of audiotapes
Presses tone button on cue to put signal on tape
Watches meter to ensure appropriate volume
Operates tape recorder to produce recording
3 Operates two tape recorders to make duplicate audiotapes
3 Operates tape recorder and record player to produce audiotapes from records
3 Operates tape recorder and TV to make tapes of TV programs
3 Operates movie projector and recorder to record audio from film
3 Operates tape recorder and projector to make synchronized audiotape
3 Sets up audio equipment to prepare for recording
3 Reads script aloud to produce scratch tape
3 Times scratch tape to assess length of tape
4 Mixes narration tape and sound to produce finished tape
3 Checks audio equipment to prepare for recording
4 Chooses record to be background music for tape
5 Evaluates script to choose appropriate music and effects

PRODUCTION OF TV RECORDINGS

Lifts and carries props to arrange set for taping
4 Operates TV camera to video record ITV lesson
3 Prepares videotape recorder set-up to ready for recording
3 Sets up videotape recorder to prepare for taping
3 Sets up mikes to prepare for taping
3 Sets up portable camera to prepare for taping
4 Operates videotape recorder to record production
3 Sets up lights to prepare for taping
4 Gives signals to talent and crew to direct production
4 Rehearses presentation to direct videotape recording production
4 Directs talent and crew to direct ITV production
3 Surveys classroom to determine set arrangement
4 Operates videotape recorder to record programs from network

PRODUCTION OF C[illegible] MATERIALS

Operates computer terminal to store program in memory
5 Analyzes steps in flow chart to translate into computer language

PRODUCTION OF MOTION PICTURES

5 Gives instruction to camera crew to direct shots to be taken
5 Gives instructions to talent to direct action for shots
5 Discusses with film editor to explain film concepts
Operates motion picture camera to record action
Operates motion picture projector to preview raw footage
Uses film splicer to splice raw footage
Operates sound equipment to record sound
3 Splices film to produce continuous footage
3 Prepares camera to ready for shooting
3 Prepares sound equipment to ready for shooting
4 Organizes shot breakdown to provide shot sequences
5 Analyzes script to write shot breakdown
5 Edits film footage to produce final film

PRODUCTION OF CONTOUR MAP

Draws lines on fiberglass base to outline map
Cuts pieces of styrofoam to build contours
Glues pieces of styrofoam to build contours
3 Uses paintbrush and paint to paint in topographical features

GETTING APPROVAL OF MATERIALS

5 Discusses with specialists to have rough cut approved

DESIGN OF ARTWORK/LAYOUT

3 Gives instructions to have brochure designed
4 Discusses with art department to assign color and lettering
Arranges letters and picture to produce artwork
Measures picture to produce scale drawing
Draws scale diagram to serve as blueprint
Traces lines on master to prepare illustrations
Uses color lift process to make visual
3 Lays out design on finished form to prepare to make chart
3 Masks tissue over visual to indicate image area
4 Uses compasses, paint, and brushes to paint pictures
4 Draws rough sketches to design title frames
4 Designs layout to design record sleeve
4 Sketches rough visuals to illustrate course outline
4 Draws original cartoons to illustrate materials
3 Chooses appropriate colors to illustrate chart
4 Chooses colors and styles to give continuity to presentation

PRODUCTION OF PROTOTYPE DEVICES

5 Writes technical specifications for contract to initiate production devices
5 Designs basic parameters of device to specify for production
5 Writes guidelines to specify minimum specifications for equipment

PRODUCTION OF MULTIPLE COPIES/PROTOTYPE MATERIALS

4 Gives instructions to have multiple copies produced
4 Calls production department to have prototype produced
5 Gives instructions for producing artwork
5 Assesses draft training materials to make production decision

ORGANIZATION OF COMPONENTS

Arranges materials in sequence to organize in prescribed order
Arranges slides in sequence to organize in prescribed order
4 Analyzes script to assign pauses and tape stops
4 Arranges storyboard cards by main ideas to assign frame numbers
4 Reorders script to follow design specifications
4 Sequences slides to match concepts in script
4 Rewrites portions of script to match words to existing visuals
3 Listens to scratch tape to match audio and visuals
5 Discusses with author to get approval of storyboard
5 Views sequences of film to approve rough cut

EVALUATION-SELECTION OUTCOMES.

MONITORING OF EQUIPMENT OPERATION

Tests equipment to insure operating condition
Tests levels on mikes to ensure quality of sound
Monitors audio dials to make adjustments in level
3 Monitors sound from location to check quality
3 Observes monitor to adjust set and camera
3 Observes set on monitors to adjust set and lighting
4 Observes equipment in operation to assess performance
3 Operates each component to test working order

VERIFICATION OF INSTRUCTIONAL SYSTEM COMPONENTS

4 Calls unit head to determine accuracy of materials
Checks slides produced to insure order filled
Checks pictures against script to insure all visuals present
3 Listens to recording to insure accuracy
4 Proofreads copy to check for errors
3 Checks course materials to insure correct catalog notations
4 Checks shot segments to insure all taken
4 Reads print-out to check program

SUPPORT-SUPPLY OUTCOMES.

UTILIZATION OUTCOMES.

UTILIZATION-DISSEMINATION OUTCOMES.

COMPETENCIES FOR TECHNICIANS IN INSTRUCTIONAL PROGRAM DEVELOPMENT

ORGANIZATION MANAGEMENT OUTCOMES.

PERSONNEL MANAGEMENT OUTCOMES.

INTERACTION WITH INDIVIDUALS AND GROUPS

3 Schedules meeting with directors to discuss proposal
4 Attends staff evaluation session to lead discussion
5 Summarizes points made to lead evaluation session
5 Writes suggestions to lead evaluation session
5 Chooses subject matter to encourage seminar discussion
5 Speaks with client group to develop rapport with group
5 Speaks with individual members to reduce specific inhibitions
5 Speaks to project directors to persuade to produce presentation
5 Listens to student to initiate conversation
3 Drives to schools to consult with teachers
5 Advises students to better master teacher relations
5 Explains material to evaluators to lead evaluation session
5 Shows materials to teachers to lead evaluation session

RESEARCH-THEORY OUTCOMES.

ANALYSIS OF DATA

4 Speaks with researcher to understand data to be analyzed
5 Supervises personnel to ensure correct data analysis
4 Compares test group with control to analyze effects of treatment
4 Operates calculator to perform statistical analysis
4 Reads statistical tables to perform statistical analysis
4 Computes money/time saved to determine cost effectiveness
4 Divides cost by market to determine unit product cost
5 Sets up data processing procedure to analyze data
5 Analyzes data to measure effects of treatments
5 Translates data into formula to perform statistical analysis
5 Analyzes student errors to evaluate lesson/tutor strategies
5 Analyzes test results to compute effectiveness of television
5 Performs statistical analysis on data to quantify teacher behavior
5 Performs statistical analysis to measure teacher attitude
5 Performs statistical analysis to analyze data

INTERPRETATION OF DATA

5 Compiles suggestions of educators to suggest new products
4 Compares data analysis with tables to determine significance of data
5 Compares solutions/information to evaluate proposed solutions
5 Analyzes reality test results to revise model
5 Examines objectives/data analysis to interpret meaning of data
5 Analyzes tutorial strategies to identify common elements
5 Analyzes tutorial strategies to identify successful elements
5 Compares observed behavior to model to identify teacher behavior problems
5 Interprets analyzed data to identify most effective technique
5 Identifies similar products to determine competition
5 Evaluates new product specifications to align with educational expectations
5 Evaluates changes in products to determine effect on educational application

DESIGN OUTCOMES.

ANALYSIS AND DESCRIPTION OF LEARNERS

4 Writes letters to past students to develop student profile
5 Discusses with client to define target population
5 Discusses with client to determine group size and character
Tabulates responses from letters to develop student profile
Tabulates information to develop instructor profile
5 Analyzes potential audience to state assumptions about learners

ANALYSIS AND DESCRIPTION OF CONTENT

5 Discusses with content specialists to assist in instructional program design
5 Discusses with content experts to understand content
5 Discusses with client to reconcile conflicts in data
5 Discusses with content specialists to identify appropriate parts of course
3 Visits locality to obtain background information
5 Analyses research on ITV to identify relevant factors
4 Reads material provided to separate into major ideas
4 Writes summary of major ideas to organize content
4 Defines entry behavior of students to determine content
5 Analyzes script to identify major ideas
5 Writes rough outline of content to develop course content
5 Analyzes objectives/flow chart to write content outline
5 Analyzes current content to decide if teaches to objectives
5 Analyzes current content to determine procedures learner must do
5 Evaluates course outline to identify coherent segments
5 Analyzes areas to identify curriculum topics

DESIGN OF PRE- AND POST-TESTS

5 Analyzes objectives to write pre- and post-tests
5 Analyzes test construction to list characteristics
5 Designs sample tests to provide models for instruction
5 Analyzes objectives to write pre-test

PRODUCTION OUTCOMES.

EVALUATION-SELECTION OUTCOMES.

ASSESSMENT OF PEOPLE

5 Observes teacher behavior to note improvements in teacher behavior
5 Codes student behavior to determine teaching effectiveness
5 Observes teacher behavior to determine training effectiveness
5 Compares old form/new responses to identify improved teacher behavior

ASSESSMENT OF MATERIALS

3 Selects time and date to preview presentation
4 Reads memos from teachers to determine materials needs
4 Calls teachers in one school to evaluate materials
4 Calls students/teacher in a class to evaluate material
4 Asks questions to determine application/use
4 Discusses with staff to clarify materials needs
4 Requests content specialists to have them preview old films
4 Discusses with teacher to evaluate materials available
4 Discusses with teaching personnel to evaluate success of course
5 Asks students questions to determine if objectives are met
4 Analyzes technical quality to reject poor quality items
4 Previews old films to evaluate physical condition
4 Analyzes produced visuals to evaluate quality
4 Previews presentation to evaluate presentation
4 Listens to tape to evaluate sound quality
5 Analyzes present curriculum needs to reject irrelevant items
5 Analyzes future curriculum needs to reject irrelevant items
5 Compares with teachers' needs to reject irrelevant items
5 Combines factors to eliminate obvious rejects
5 Designs evaluation forms to evaluate effectiveness of course
5 Analyzes program to assess logical development
5 Evaluates slides and tape to improve quality of material
5 Evaluates take to accept or reject film
5 Observes run-through to suggest improvements in film
5 Views material to do initial screening
Operates movie projector to preview film
4 Plays back videotape to check quality of recording
5 Pilot tests materials to evaluate effectiveness of materials
5 Teaches course to evaluate effectiveness of materials
5 Observes student behavior to evaluate presentation effectiveness
5 Analyzes question/answers to evaluate presentation effectiveness

ASSESSMENT OF TECHNIQUES

5 Discusses with student to evaluate combined activities
5 Discusses with student to evaluate suggested activities
5 Evaluates pilot performance to evaluate program effectiveness
5 Designs pre- and post-tests to evaluate effectiveness of program
5 Evaluates draft programs to assess methodology used

SUPPORT-SUPPLY OUTCOMES.

UTILIZATION OUTCOMES.

UTILIZATION-DISSEMINATION OUTCOMES.

DISTRIBUTION OF INFORMATION

Mails copy of work order to inform instructor
Sorts incoming mail to distribute in boxes
Circulates flyers to inform staff of new products
Lists operating flaws in equipment to inform repair technician
Writes notifications to inform teacher of film arrival
Distributes information to get information to employees
3 Transmits report to disseminate research findings
3 Collates project literature to give materials to visitor
3 Writes notice to publicize demonstration
4 Compiles list of recommended equipment to inform staff
4 Lists recommended equipment per unit to inform staff
4 Lists recommended manufacturers to inform staff
4 Writes instructions to inform production units
5 Writes memos to staff to inform on progress of course
5 Writes report to management to inform on progress of course
5 Assesses cost benefits of training to inform management
5 Translates technical language to describe project to management/customer
5 Writes report on project to present progress to management/customer
5 Edits report on project to disseminate findings
5 Develops new procedures to route information
5 Writes reports to disseminate findings
5 Conducts briefings to inform on progress of course
4 Writes summary of data to report to supervisor
Distributes messages received to inform staff
Sends notification to requestor to inform of date scheduled
3 Sends reactions to producers to inform producers
3 Sends suggestions to director to inform director of needs
4 Circulates information to inform staff of materials and equipment

DISCUSSION (TWO-WAY INTERACTION)

4 Uses telephone to answer service questions
Converses with supervisor to discuss repair
5 Discusses with client group to answer questions regarding evaluation
5 Discusses micro teaching principles to prepare teacher for taping
5 Discusses with students to clarify issues
5 Discusses with visitor to answer questions
5 Listens to visitors/student/teacher discussion to provide help if needed
5 Discusses with visitor to summarize activities
5 Discusses with students to clarify media principles
5 Discusses with student to explain different activities
5 Critiques videotape with teacher to point out teaching behavior
5 Observes teacher teaching to identify changes in behavior
5 Conducts seminar to encourage discussion

TEACHING (FORMAL INTERACTION)

5 Designs conference to inform management of changes
4 Gives instructions to students to orient them to pilot test
4 Discusses with students to clarify elements of composition
4 Discusses with students to clarify lenses/setting decisions
4 Supervises use of camera to provide experience in photography
4 Discusses pictures to clarify principles of composition/setting
5 Discusses with teacher to suggest behavior improvements
5 Speaks to management and customer to present departmental progress
5 Supervises training conferences to teach new teacher behaviors
Operates slide projector to make presentation on project
4 Gives directions to students to assist in equipment operation
5 Gives lectures to inform students
5 Teaches over CCTV to instruct in media production
5 Advises students to assist in making media presentation
5 Advises students to assist in multi-media presentations
5 Administers pre- and post-tests to reinforce teaching

3 Shows how to replace bulbs to inform aides
3 Explains operation of equipment to inform instructor
4 Teaches preventive maintenance to inform repairmen
3 Shows how to operate dictaphone to instruct students
4 Demonstrates equipment operation to train student workers
5 Describes microteaching to inform student teachers
5 Explains tasks to be done to train staff
5 Encourages writing of objectives to teach thru active learning
5 Encourages writing of objectives and tests to teach thru active learning

EXPLANATION (INFORMAL INTERACTION)

Writes date and name on card to inform requestor
3 Uses telephone to answer routine questions
4 Converses with assistants to advise on repairs
4 Talks with teacher to inform of procedure
4 Discusses with teacher to explain references sources
4 Speaks to visitor or superior to receive request for information
4 Calls producers to inform of mistakes in product
4 Calls colleagues to inform of staff needs
4 Calls placement agency to inform of staff needs
4 Speaks to technical workers to inform of deadlines
5 Discusses with client group to create non-threatening evaluation
5 Discusses with student to explain logistic aspects of learning ability
5 Discusses with student to explain unique components of learning ability
5 Discusses with student to explain assessment procedures
5 Discusses with student to explain handling of materials
5 Discusses with student/parent to explain student progress
5 Discusses with teacher to explain student behavior not being met
5 Discusses with teacher to explain teacher behavior causing problem
5 Discusses with principal to explain suggestions made to teacher
5 Discusses with teacher to make further suggestions
5 Discusses with product planners to inform of educational needs
5 Speaks to technical workers to explain PERT chart
5 Speaks to student to explain post-test
5 Speaks to teacher to receive request to consult
5 Speaks to architects in person to explain facilities needs
Drives visitor to school to show project in operation
5 Instructs group to explain facilitator role
5 Instructs group to explain content/process difficulties
5 Advises students to inform on courses to take
4 Discusses with teachers to inform on materials and equipment
5 Instructs client group to explain purposes of evaluation
5 Instructs client group to explain role of evaluator
5 Instructs customer in II to define problems in process
5 Instructs customer in II to define changed concepts of instruction
5 Instructs customer in II to define effects on curriculum
5 Instructs customer in II to define new role of testing
5 Instructs visitor to describe layout of classroom
5 Serves on committees to disseminate information on media
5 Instructs teacher to suggest alternative behaviors
5 Instructs supervisor to explain use of material
5 Advises teachers to inform of materials available
5 Advises on film making techniques to inform staff